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RICHARD H. EDMONDS,
Editor and General Manager.

THOMAS P. GRASY,
General Southern Correspondent.

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The Postal Telegraph Co. has arranged for the extension of its lines into a considerable part of the South, especially in Texas, where it has not heretofore covered the field. The Manufacturers' Record congratulates the people of the country to be reached by the Postal because of the introduction of this system. It is an interesting fact that wherever the Postal Company operates its service is of the very best. In the large cities, as well as in the small towns, our experience has always been more satisfactory with the Postal than with any other telegraph company. Its messengers are quicker in their movements, telegrams are delivered more promptly, and in every respect the service is most satisfactory.

An important ruling by the interstate commerce commission was announced July 3 in the cases put before it by the Lynchburg Board of Trade, in which two railroad and two steamship companies were charged with unjust discrimination in fixing freight rates.

The fourth section of the act to regulate commerce gives to the commission power to modify the law under certain exceptional conditions, but there is nothing in that section that authorizes a carrier to use his own judgment in such cases. Only the commission has this power. The commission therefore ruled that "when rates are relatively unjust, so that undue preference is afforded to one locality, or undue prejudice results to another, the law is violated and its penalties incurred, although the higher rate is not itself excessive; and such a rule is especially applicable where a given relation in rates, long continued and concededly equitable, is suddenly and almost completely reversed, merely because other carriers to the longer-distance point have disregarded their duty."

The Lynchburg Board of Trade gained what it sought, and a rule was formulated by the commission that will determine the future action of transportation companies.

To Press Southern Development Upon the World's Attention.

Many thousands of general investors, capitalists and manufacturers throughout the North and West and in Great Britain will have a clearer insight into the advantages of the South, and a better knowledge of what it is accomplishing, after reading the next issue of the Manufacturers' Record than they have ever had before. Its value in attracting attention to the South, and especially to the growing power of Southern commerce, cannot be overestimated. That issue will be more widely and judiciously circulated among manufacturers, ship-owners and builders, and investors and general business men in this country and in Europe than any publication ever before issued in the interest of the South.

We have undertaken a series of special editions in order to make each one emphasize some striking feature of Southern advancement which could not otherwise be brought so conspicuously to public attention. It is proposed, in this series, to be issued during the next twelve months, to present to the world at large the most comprehensive outlines of the expansion of particular interests in the South. The very remarkable progress of the foreign trade of the South, so essential to the prosperity of the whole section, makes the New Orleans issue of next week, and one or two, also devoted to Southern commerce, to follow shortly, of unusual timeliness and of great value to all who are watching the progress of this section. Following these will be several special issues covering other features of Southern upbuilding. Arrangements have been made to guarantee that these, like our next week's issue, will have the largest circulation among manufacturers and capitalists and business men generally, in this country and abroad, of any publication ever issued in behalf of Southern advancement. Every manufacturer in the United States must necessarily be deeply interested in such a comprehensive plan looking to the upbuilding of the whole South, and thus to an increase in the demand in this section for machinery and manufactured products generally. Thus during the next twelve months regular advertisers in the Manufacturers' Record will have the benefit of this remarkable extra circulation without extra cost.

Sulphur Mining in Texas.

The recent announcement that the Standard Oil Co. would make large developments in sulphur-mining in Louisiana, as given in the Manufacturers' Record some months ago, is now followed by the organization, under the laws of West Virginia, of a \$500,000 company known as the United States Sulphur & Chemical Co., to operate in Texas. It is reported that the control of this company is in the hands of prominent English and American capi-

talists, with Mr. R. E. Kyle, of Gadsden, Ala., as president, and Mr. S. E. Rannheim, of New York, as agent in that city. The company has, it is said, secured control of large deposits of sulphur in Texas, and expects to be able to deliver sulphur in Eastern markets considerably below present prices.

An Improvement of Value to the South.

Commerce, a London magazine, publishes in its issue of June 17 a report of quite a cheerful meeting of the Middlesborough Town & Lands Co., Limited, which was held in that city on the preceding Thursday. The chairman of the meeting, Mr. Henry Partridge, "struck the note of achievement" by congratulating them on the great improvement in their position compared with what it was about two and one-half years ago.

The liabilities of the company a matter of great importance amounted at the end of 1895 to \$27,146, which included the residue of the old liabilities figuring at the date of the reconstruction at \$340,000 and some current amounts for ordinary administration and development expenses. He thought they would consider the sum mentioned very moderate, especially as about one-half of the amount was only a contingent liability. Their present available cash assets were just about sufficient to pay the whole of the liabilities, supposing that no portion of them was contingent. The collections of their manager in Middlesborough for the present month had already equalled those of the first three months of last year, and there were no special amounts in these collections. That was a fact which would give them some idea of the progress they referred to as having been made in the town of Middlesborough. The population had largely increased, and whereas they had had a large number of houses empty ever since the reconstruction, they were all now let, and there was a further demand for houses.

The British stockholders who retained their faith in the future of that costly enterprise, and, instead of abandoning it, nursed it through all its years of trouble, deserve not only the congratulations of their chairman, but of all in this country who know of their long and costly struggle.

There were other remarks of Chairman Partridge worthy of note, and especially this. Said he: If the development of Middlesborough had been conducted in the past entirely as the development of a country, and not as a stock-exchange operation, he believed it would now have been an enormous success. However, they intended to make it a success, and should do so, provided their plans were aided by the shareholders. He said:

Before they were asked to render assistance in this matter the directors made every possible inquiry, and they were satisfied that there was a reasonable prospect of the iron works being a success if sufficient money were provided. They had received several offers for purchasing land, but they had deemed it wiser to keep it instead of accepting the terms submitted to them. Their holding of stocks and bonds had been reduced by \$146,000. The value at which their land was placed in the accounts was \$729,814. Less about 200 acres, it stood in the 1891 balance-sheet at \$5,250,000. He believed that they had now turned the corner, and that with the shareholders' help the future of Middlesborough was assured.

From the foregoing it is evident that this company has determined to succeed by practical and conservative business methods. It no longer counts the prospective as the present value of its real estate, but has scaled that and all its other assets down to their hard-pan value. From now on through the future the company proposes to have a steady, wholesome growth, and on the splendid foundation laid by its enthusiastic projectors to develop a great industrial city that will ultimately be the fulfillment of their magnificent conception. They do not expect to accomplish this by a great sounding of trumpets or any of the boom methods of the past, but by such conservative investments as the place itself and the general conditions of commerce and trade will warrant, in enterprises already established there, or in those for which the foundations were laid before hard times and general depression spread world-wide and checked or stopped industrial progress in all civilized countries.

Commerce commences its report by saying there was "quite a cheerful meeting." From this report it is evident that the shareholders in attendance agreed with the chairman, for his report received their unanimous endorsement.

The South has especial reasons for wishing that the most sanguine hopes of this Middlesborough company may be fulfilled. During the boom period it was exploited with such skill and continuity of publicity that it was better known in England than any other Southern enterprise. When finally it came to grief, and a multitude of British investors mourned over their losses, the failure gave a severe shock to the confidence British capitalists had begun to have in Southern investments. The rehabilitation of the Middlesborough company, its triumph over all disasters, and its steady and successful, even if slow, development of its properties, will aid to re-establish that confidence and to bring many English investors to the South.

Solid Development vs. Speculation.

In an article published in this issue, written by a well-known mining engineer, stress is laid upon the importance of discouraging all efforts to create a speculative boom in Southern gold-mining operations. This is the position constantly taken by the Manufacturers' Record, and we are glad to see the force with which the situation as to the real value of Southern gold-mining possibilities as contrasted with speculative undertakings is presented. There is abundance of room for legitimate, conservative mining operations in the South, but stock speculative schemes are not needed. This section has been cursed for many years by the failure of speculative ventures, started without adequate capital and often managed by men without experience in successful mining. Of such the

South wants no more. Their fore-ordained failures have kept away capital and caused the public to believe that there was no field for profitable gold-mining in the South. For legitimate companies, with ample capital and the highest skilled management, few sections offer a better chance for an assured steady profit than the South. There is an abundant supply of low-grade ore that can be handled to advantage, and all operations should be given to the utilization of these ores, rather than to visionary efforts to locate some great bonanza. Let us have gold-mining wherever possible in the South, but let us avoid speculative and boom mining schemes.

*Gold Mining in the Appalachian Belt.

The reputable journals and newspapers of the country are to be congratulated upon their success in once more attracting attention toward the gold mines of the Appalachian belt, as it is almost wholly due to them that a renewed interest has been excited in fields so long neglected. Notwithstanding the lamentable failures in mining and processes which have left an indelible impress on the landscape of the entire mineral belt, from the Potomac river to the Alabama line, there are successes which are apparent and which prove values of enterprises properly conducted, so that the persistent advocacy of facts, which aim to place the mining of gold ores in the South in the same category with a like business in the Western States, seems to have produced substantial results, for we are promised an influx of prospectors and a wave of excitement which will amply repay us for the idleness of many years.

The question may now be asked, whether the same old-time practice and unbusiness-like principles, which brought nothing but discouragements and disasters to the majority of those who took up this problem years ago, shall again be introduced and repeated, with possible modifications as to means, but with no differences as to the actual results, leaving the field after a short period of agitation and useless expenditures a barren waste for another generation. Cannot we inaugurate something better in every respect than the boom periods of the past, and, in the light of the successes in winning gold under most unpromising conditions, and in countries remote from all modern conveniences, is it not possible for those who have so long and patiently urged upon the mining world the value of this Southern section to forcibly impress upon the coming and better trained race of gold miners the necessity of a careful and deliberate study of conditions, thorough testing of property in hand before agreeing to expenditures for mining and milling, and, finally, submitting the entire matter of working ores to men whose known success in other fields is a positive guarantee of success in this case?

There is no master secret in the business of mining and milling gold ores, and there are plenty of men who can be called from successful enterprises in the West to inaugurate like successes along the mineral belt, just as there are men now in the South who can be trusted to win profits from a mine business, however large or small. This class of men cannot be gotten into schemes, where the chances are entirely with the stock jobbers, and where the salary account is weighted with loss of reputation, sooner or later.

Every reputable mining and trade journal should be hand in hand in this work of a genuine re-awakening of a Southern gold-mining business, and equally agreed

*W. H. Adams, in Engineering and Mining Journal.

to frown upon any and all attempts to handicap the initial work of legitimate mining, by formation of companies and stock sales based upon nothing but prospects, for upon the actual success of the initial operations hinges the possibilities of bringing into the South sufficient capital to properly open the goldfields.

There is, and has been, altogether too much unwarranted talk, and too many statements which are based upon hearsay, or the unsupported evidence of interested parties, as to the richness of this field or that mining tract. We have outgrown this class of testimony within the past two years, and it is sufficient for the case in hand at the present time to say broadly that we have territory suitable for actual developments on a practical scale; that we are in exactly the condition of every mining region in the world—with some good mines and a lot of poor ones—that we need patient investigators and prospectors, who are sent to us by men of means, who will stay with us until something good is found, and who will return with money and modern machinery for the proper handling of low-grade ores, which we know to be abundant in many sections.

We can afford to tell the truth about this Appalachian belt, as it must be told by the best of prospectors very soon, and how much better to tell it at once and have the credit of the statements.

It would be of value to new comers, and lead to a more general understanding of the different sections of the mining belt, if there was a division of the territory into districts, as is the custom in other countries. For the State of Virginia:

The Potomac District.—Comprising all the mines which lie north of the Potomac river in the State of Maryland.

The Fairfax District.—Comprising all the mines which lie between the Potomac and Bull Run.

The Fauquier District.—Comprising all the mines which lie between Bull Run and the Rappahannock river.

The Culpeper District.—Comprising all the mines which lie between the Rappahannock and Rapidan rivers.

The Stafford District.—Comprising all the mines in Stafford county.

The Orange District.—Comprising all the mines lying in Orange county.

The Spotsylvania District.—Comprising all the mines lying in Spotsylvania county.

The Louisa District.—Comprising all the mines lying between the North Anna and South Anna rivers.

The Goochland District.—Comprising all the mines in that county.

The Fluvanna District.—Comprising all the mines lying in that county.

The Buckingham District.—Comprising all the mines lying between the James and Appomattox rivers.

Other districts lying to the southward could be named in the same manner, thus fixing localities at all times.

To individualize the known developments of these several districts, there are sources of information accessible to all, the latest and best known general digest of this subject being the able paper of Messrs. Wilkins and Nitze, read before the American Institute of Mining Engineers at the Atlanta meeting in 1895.

This paper should be in the hands of every person who is at all disposed to invest in Southern gold properties, and if the conclusions arrived at do not meet the expectations of over-sanguine operators and speculators, it is the truth stated in plain terms and from men who can afford to so state it.

In the light of the cold facts that we have not one paying mine on the gold belt in Virginia; that not one proper development has yet been inaugurated; that

not one mine can show to experts sufficient tonnage of ores in a shape for measurement or calculation upon which to base a proposition for erection of a plant such as is known to be so common in other mining countries, it is our duty to warn the public at large against all statements, from whatever source, which differ from the careful conclusions arrived at by the writers named.

It may be said fairly that a development company, with sufficient capital to inaugurate workings on the scale and in the manner as practiced at the Haile mine, under Captain Thies, stands every chance for big winnings, as there are several properties in the State which will supply ores in abundance for a low-grade proposition in milling, and there are many locations which would be adapted for the concentration of the ores from different mines and their treatment at a common centre. It is at this point, however, that greatest caution should be exercised, as it has been well said that there are not in all the South six mines like the Haile. Why this is stated so positively, and why the need of greatest caution in accepting any other statement, especially if it comes from an interested seller, is the argument so admirably made by the writers named above, and should be read to be appreciated.

Gold mining and milling is a business as worthy of close attention and study, and as sure to be profitable when rightly conducted, as any business which occupies men's thoughts, and the master operators of the world, in this profession, are as careful to choose their working staff as do banking houses, acknowledging a special aptitude and training to be as necessary in the one case as in the other. We see this very plainly indicated in the South African gold regions, where none but well-tried engineers of the world are employed, and where successes are won with plants of enormous extent and cost, operating upon ores low grade and refractory.

We have lived to see brought about within a few years past an almost invariable success in gold extraction processes, but it is due to the bringing together of large capital, skilled workmen and individual ownership. The failures are to be traced to an absence of true business principles.

We have the most absolute and undoubted authority for statements of costs, etc., with regard to the class of ores to be met with on this belt, and without wishing to repeat details which have been so often presented, yet to emphasize the foregoing remarks, the costs at the Haile mine may be given:

Mining, per ton of ores on cars at ore pits.....	\$1 10	
Transportation, per ton of ore to mill.....	12	
Milling, per ton of ore through stamps.....	40	
Concentration of stamp stock, per ton.....	12	
Chlorination, estimated per ton of milled ore.....	17	
Total cost of mining and working one ton of gold ores, including chlorination of concentrates.....	\$1 91	
Value in one ton of mine ore.....		\$4 00
Profit in working one ton of mine ore.....	2 00	
	\$4 00	\$4 00

Comparing further, the Alaska Treadwell mine report for the year 1894 is as follows:

Mining, 220,043 tons of 2000 pounds each, per ton.....	\$ 60	
Milling, 220,043 tons of 2000 pounds each, per ton.....	44	
Chlorination, concentrates from above tonnage.....	17	
Other charges, freights, etc.....	14	
Total cost of mining and working one ton of gold ores, including chlorination of concentrates.....	\$1 35	
Value in one ton of mine ore.....		\$3 20
Profit in working one ton of mine ore.....	1 85	
	\$3 20	\$3 20

And the Alaska-Mexican gold mine reports as follows for 1894:

Mining, 73,141 tons ore, per ton, \$	70	
Mine supplies, on same tonnage	32	
Milling, including labor and supplies.....	58	
Other charges, of all kinds.....	19	
Chlorination, concentrates from above tonnage.....	18	
Total cost of mining and working one ton of gold ores, including chlorination of concentrates.....	\$1 97	
Value in one ton of mine ore.....		\$2 79
Profit in working one ton of mine ore.....	82	
	\$2 79	\$2 79

An analysis of these three statements will show that only in the item of mining was there any particular difference in costs, and this is to be expected when it is stated that in the case of the Alaska companies the ores are mined from open cuts, and in so greatly an increased tonnage over the Haile mine, its ores being raised from underground stopes and drifts.

It is possible to further extend this comparison list, but the mines mentioned are almost identical in character of ores, and therefore may be taken as fair examples of the best practice of today, from which statements can be drawn the obvious lesson, that only in large quantities and under the most exacting management is there a profit.

The secondary products of these ores, the sulphurets, are relied upon for the greater part of the profits, and it is a self-evident fact that no ordinary mine can be run at figures which are shown to be produced by ores of this class. Suppose the case of mines located, however favorably, on the Atlantic gold belt, which contain no more than shown in the Haile mine exhibit, \$4 per ton in gold, and less than half of that amount in free gold.

To equal this result it will be necessary to duplicate the plant of the Haile, which in mines and mills stands charged to investment account a sum probably over \$200,000 and showing a development of ores which will cover several years, working at the present rate of 100 tons daily. Nothing less in tonnage than this will answer for the low mine and mill cost as shown, and this is the point we should emphasize in strongest language, viz, that no statement of costs on any less scale than the Haile mine, or any less tonnage per day, is proper to be made in determining the outcome of a low-grade mine investment.

It may be that we should qualify this statement so far as individual ore bodies can be proved to be more valuable, but the mine future of this Appalachian belt must rely upon our ability to work low-grade ores, and no other proposition should be admitted.

If I make myself clear in the premises it will save many an innocent investor the little or much he may put into gold mines in the Southern States, when that investment is a part of a capital insufficient for the purposes and for the problem. As the problem has been settled for him by such mines as the Haile, it would be the greatest of folly to listen to any proposition which promised success on other and assuredly losing lines. No one should be entrusted with the solution of the gold problem of this belt who has not made a success in other fields and on similar problems.

Managers of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises and needing machinery or supplies of any kind will find it profitable to consult the advertising columns of the Manufacturers' Record. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

"Some Attractions of the South."

Mr. Jas. R. Randall, the author of "Maryland, My Maryland," contributes to the June number of the "Southern States" magazine, of Baltimore, an interesting illustrated article upon "Some Attractions of the South." Correcting as it does some of the misconceptions of many about the South, and pointing out how the trend of advancement is southward, this article is of general interest. From it we take the following liberal extracts:

"It seems to be a fact, though a strange one, that many thousands of persons in this country, as well as abroad, regard the South as a flat, uninteresting region, wholly devoid of any natural beauties which characterize many other portions of the world. This sentiment, emphatically false and misleading, has been propagated and maintained despite the correction of Northern tourists and multitudinous publications in newspapers, magazines and other descriptive articles, more or less faithfully and profusely illustrated from photographs or artistic sketches taken on the spot. Nothing, however, is more difficult to eradicate than ignorant or traditional prejudice. It is fixed in the mind like the saw-palmetto in the earth, which, growing but a few feet above ground, has a root that is, picturesquely or pungently, said to reach out to China on the other side of the globe. As Americans are omnivorous readers, and as the South has for many years, especially in the two last decades, had persistent literary advertising, I must take for granted that much of this fallacy perpetuates itself in a species of morbid incredulity that almost defies reason and common sense. It is best, perhaps, when such stolid Ephraims are joined to their idols, that they be let alone; but, unquestionably, there are numerous persons who are innocently duped, and, therefore, excellent subjects for missionary work such as the 'Southern States' magazine is now so usefully, powerfully and prosperously undertaking.

"In a former article in the 'Southern States' magazine, I wrote of the Skyland of the South, chiefly treating of that region which is most commonly known at Asheville and within a radius of about 100 miles circumjacent thereto. In that article an attempt was made to produce a panoramic effect of the South's alpine section, more as a sample of the highland there than a detailed account of the vast area of mountain and plain, sublime as Switzerland and yet unspeakably more charming, because the great peaks of the South are clad with verdure or tillage to their very crowns, while the uplifted lands of Europe are bare and bald in comparison. It is not my intention to repeat what I then wrote, but to glance at this grand development of the Great Architect. It should suffice any rational person to know that a man like Mr. George Vanderbilt, who has prodigious wealth and wide knowledge of the world, would not select a mountain section of the South to build a more than royal palace, with its imperial domain, unless he had determined that nowhere on this terrestrial ball could he find any place more enchanting. And it is indeed an almost matchless prospect, with giant heights, lovely vales, at the meeting of two noble, pellucid rivers, where the atmosphere comes with health-laden wings, and purest drinking water is unsealed from the magical sanitariums of the hill-bosom hardby.

"I might rest the case here and feel that even the most stubborn skeptic would be convinced, but it may be added that equally majestic and alluring lands are found, in prodigal profusion, in other parts of North Carolina, in South Caro-

lina, Alabama, Georgia, the Virginias, Tennessee, Kentucky, and, in degree, also Arkansas. A Maryland man, naturally and with proper pride, boasts of the western portion of his State, and all who visit Pen-Mar, Oakland and Deer Park, for example, recognize the glory of the vision; but I venture to say that the South more than equals that scenery, and I am bound to declare that the view from Lookout mountain, with the serpentine Tennessee river at its base, is much finer and more varied than any spectacle in Maryland. If there is a more splendid region than Southwestern Virginia I have yet to see it. In our far Northwestern empire there are loftier peaks and wilder chasms, but no such country as the South, with its immeasurable natural advantages for all wants of civilized man. If there is anything essentially amiss there I am not conversant with it, unless it be, for some reason or other, men who inhabit such places have not always or adequately realized the treasures they possess. In degree, the same may be declared of the whole mountain section of the South, which, along with the Piedmont country, will eventually become the predominant section of this mighty republic. Certain political, financial and racial conditions have retarded instant, invincible exploitation; but all difficulties will have final surmounting, and the South, as Keats personified Poetry, is

"Might half slumbering on its own right arm."

"It would be tedious, perhaps, and quite superfluous to point out the stupendous magnificence of other alpine parts of Georgia, Alabama, Tennessee, the Carolinas, the Virginias and Kentucky. Let me simply invite my incredulous Northern or European brethren to visit these sections and see for themselves that most extravagant pen-picturing is poor and weak when contrasted with palpable objects.

"The hill country of the South is equally attractive, and, in some respects, according to individual preference, more desirable for settlement than the mountain region. The Eastern or Western man would find in such places lands as fertile as any he left at home, with productions similar to his own and a climate far more genial. In this region, as in the mountain land, nature has been bountiful with healing fountains, and no Southern man need leave his own section to cure any complaints that thermal or medicinal waters hygienically reach. The Hot Springs of Arkansas are celebrated far and wide, but there are other waters equally potential in the same direction. Near Spartanburg, S. C., adjacent to the battlefield of Cowpens, where Tarleton was overthrown by the generalship of Morgan, Howard, Pickens and William Washington, there is a spring famous, from Revolutionary times and Indian tradition, which works veritable wonders for nearly every disease that affects our poor humanity, and is besides a natural Keeley cure, with none of the preliminary tortures of the doctor's formula. The country roundabout is rolling, fecund, delightful, with great hardwood trees and superb tillage, where clover grows spontaneously, as if to invite the Northerner to come there and abide, promising him all of earth's products that he is accustomed to, and not a few other crops and fruits and flowers that he cannot coax at home outside of an expensive conservatory. It would require many pages to recite the natural advantages of such portions of the South. They must, as the proverb goes, be seen to be appreciated.

"There are indeed flat or prairie sections of the South, immense in area and boundless in fertility, as well as pleasing to the most artistic eye. All who read this magazine know what marvels have

been accomplished in such portions of Florida, Louisiana, South Carolina, Georgia and other level lands by Northern as well as Southern men. Need I even allude to the rice region of Louisiana, the coast truck farms of Georgia and South Carolina, the peach country of the same Commonwealths, the sugar-cane plantations of Louisiana and Florida, and that poetic domain of the Teche, not far by rail from New Orleans, which astounds the traveler with its vegetable and marine opulence, while ravishing his spirit with pictures of land and water, such as beguiled the famous Joseph Jefferson, who is at once painter and actor of high art.

"If you desire seaside diversion, there are innumerable places on the Atlantic and Gulf coasts of the South where the beach is hard as you could wish for driving, where the billows are as bold as one could desire for bathing, and, in some places, in the semi-tropic zone, where a daily plunge in old ocean, along the Oriental Indian river, can be had in winter as well as summer. Why speak of Virginia Beach, near Norfolk; of Morehead City, in North Carolina; of Sullivan's Island, near Charleston, with Fort Sumter's ruined battlements in full view, and the grave of Osceola at the gate of Fort Moultrie; of Tybee, near Savannah; of Pablo Beach, near Jacksonville; of the multitude of Gulf resorts between Mobile and New Orleans, dotting the Louisville & Nashville Railway? At all of these delectable places the scenery is inebriating, fishing excellent, boating superb, the company refined and intelligent.

"If we had not a deeper, more serious and tremendous element in our lives, compelling us to labor, to sacrifice, to conquer our animal natures, to atone, perchance, for delinquencies, in order to reach meritoriously the endless life beyond, the only land of real happiness, how inspirationally a man might pass his days in such regions! As it is, with all of our moral responsibilities alive to conscientious duty, there is more genuine, honest, sincere opportunity for such content and pleasure as the world affords at the South than in any other country, unless, indeed, the settler there be afflicted with acute or chronic nostalgia and incapable of remedial deliverance. Luckily, perhaps, the larger number of human beings may be said to either have freedom from this disease, or at any rate, led by interest or self-protection, and then by acquired ties, shake it off actually, if not sentimentally.

"That grand discontent which, under Providence, drove Columbus, as well as Stanley, forth on voyages of discovery, measurably actuates millions of our fellow-creatures, and so it comes to pass that often Northern men, like Quitman or Prentiss, or many other distinguished and even historical characters, become more Southern than Southerners.

"There is, however, a natural, inexplicable and subtle law that compels redundant Northern population to move southward. Now and then it is curbed, thwarted, arrested or suspended; but ultimate onset, peaceful, useful and resolute, is certain and absolute. The advance guard of 'relocation' has already come; the main army is behind ready to move when times are ripe for action and when the Ruler of the Universe gives the signal for a general advance. Knowing and believing this, I look even upon lonely waste places of the South with unconcern, and I patiently await inevitable results. Before many decades have passed the South will have comparatively no abandoned lands, whether of mountain, vale or prairie, whether in the pine or hickory or live oak section. She will be an immense, populous, opulent empire. She will have a composite industry of agriculture, manufacture and commerce. She will be ag-

gressively enterprising, too, because of Northern influx. And this mighty productive, industrious, picturesque South will demonstrate its spirit, as well as its material potency, not only in its alpine region, but in the 'Piedmont escarpment' and along the Mississippi valley, and on the nethermost plains of the Gulf and Atlantic. The same spirit that created a new St. Augustine—that dream of Arabian Nights—and sent its pulsations down the Indian river, even aspiring to clasp Key West—the outpost overlooking Cuba—with railway steel, will animate the whole South of the near future and revolutionize the continent. I trust that, as the South shall grow in material glory, she will also diffuse over all the land that better spirit of conservatism, true Union, genuine liberty and pure religion. I trust that she will not greedily and destructively abandon herself to the Golden Calf, but rather become, in all wholesome ways, worthy of temporal blessings which are promised to those who 'Seek first the Kingdom of God.' A New England republican governor—now in dignified, comfortable, intellectual retirement—once told me that the North, some day, would be obliged to lean upon the South's conservatism, in morals as in other things, for security from forces of evil omen at home. Apparently that epoch is near at hand, if we can interpret certain signs of the times. The peaceful battle of the future civilization, therefore, promises to be fought with combinations much different from those obtaining in the martial combat of the past. In that tremendous coming time our very liberties may depend upon the Northern graft upon the South's autonomy. There may be, as there have hitherto been, desperate efforts to prevent the relocation of peoples southward, but it will ultimately burst all barriers, just as the Mississippi river, rising in a hyperborean nook, finds its resistless way to the tropic Gulf, bearing to the South the rich soil of the Northwest and the spoil of half a continent. The Northwestern man settled in Louisiana's level lands well stated that he had come South to find his father's farm, which had taken, via the Father of Waters, what so many Northerners should take—a Southern tour. Our brethren should come, for enlightenment, profit, diversion, settlement. First comers will be the wiser, because I have noticed that when a thrifty Northern brother gets a really good thing at the South he does not let it go, even to Yankee friends, on ground-floor prices. But whether anybody likes it or not, this shifting of centres of population will come to pass. Even Wall street and rich, close corporations attached thereto may perforce contribute to the future greatness of a Greater South, in order to benefit themselves, for the cause of Southern prosperity is the cause of the whole Union, and this portentous truth cannot be too promptly learned and wholesomely applied."

Insurance that Insures.

The insurance commissioner of Georgia has determined to investigate thoroughly the methods pursued by insurance companies in that State, and will enforce the law requiring all insurance companies and brokers to have licenses. It is stated that considerable insurance has been placed upon factories and other property by agents who really had no right to represent the companies whom they claimed to represent. The Eden Park Cotton Mills Co., it is stated, was insured to the amount of \$25,000 through several of these agencies. It has been unable to collect the amount due since the fire in its mills, on the ground that the policies were not valid.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

A Large Depot.

The depot now being built for the Seaboard Air Line at Atlanta, Ga., is to be completed by October 15 of this year. This will be one of the largest structures of its kind in the South, being 142 feet wide by 625 feet in length, with an office 56x142 feet. The office portion will be built of pressed brick and contain all the modern improvements. The main building is to be composed of steel and brick, and will be practically fire-proof. Grant Wilkins, of Atlanta, Ga., is general contractor for the work.

Another Hotel Project.

A dispatch from Tampa, Fla., states that Pres. H. B. Plant, of New York, of the Plant Railway & Steamship Co., has determined to erect another large hotel on the West coast. As readers of the Manufacturers' Record are well aware, this company has built and operated several of the finest hotels in this country, among them being the Tampa Bay Hotel, at Tampa, Fla. It is understood that the new hotel will be located on a tract of 400 acres of land at Clear Water. It will contain 400 rooms and be five stories high, facing the Gulf of Mexico. Electric lights, steam heat and all modern conveniences will be included in the plans of the structure. It is understood that the grounds are already being laid out with a view of having them ready when the hotel is completed.

A Practical Idea.

The Plant Railway & Steamship Co. has determined to establish a railroad hospital service, for the benefit of its employees, in Florida, Georgia, Alabama and South Carolina. A hospital department has been erected, with headquarters at Way Cross, Ga. Here each man who intends entering the service of the company must pass a physical examination. In case of accident the disabled party receives free medical attention and medicine, and by becoming interested in the insurance plan promoted by the company, he receives from fifty cents to \$2.50 a day while under treatment. Workmen can have their lives insured for an amount ranging from \$100 to \$50,000. Each employee has a right to enter into the insurance scheme by paying dues ranging from \$1 to \$5 per month. While it is optional whether they become interested in this department or not, the indications are that most, if not all, the men will consider it with favor, as the plan embodies so many practical features.

A Railroad Project.

The Manufacturers' Record prints a rather sensational railroad story, which, if true, means a great deal for this section. The story is that a company has been organized and chartered for the purpose of constructing an electric railroad from Evansville, Ind., to Southport, N. C. The projected route is via Knoxville and over the line laid off for the Knoxville, Carolina & Western Railway. The stockholders are Eastern parties.

The Manufacturers' Record says that the contracts have been let and work will commence within ninety days, but this is hardly probable, for were it so something would be known concerning it locally. As it is, the story in the Manufacturers' Record seems to be about the first intimation that this community has had in regard to the matter.

If the road is built, it will certainly be the greatest blessing that this part of the

country has received lately.—Knoxville Sentinel.

The Manufacturers' Record published this as a letter from our New York correspondent, stating that efforts had been made to verify the matter. Our correspondent got his information from the promoter of the company, who assured him positively that every statement made was true, and permitted the examination of papers that seemed to prove this. Beyond this we have not been able to get any facts, as stated when the letter was published.

Misleading Figures.

The Railroad Gazette and Railway Age have published their usual semi-annual statements of new mileage in the United States during 1896, and, as usual, the figures are so wide apart as to cause considerable doubt as to the correctness of either. Both papers have been considered authorities for so many years that their statistics are published very widely in the daily and weekly press, and it is for this reason that the errors are of a very serious character, as they tend to greatly mislead the public. In comparing a few of the totals by States we find that in 1895, for example, according to the Railway Age, fifty-four miles of line were built, and according to the Gazette, forty-four. Michigan has fifty-four miles, according to the Age, and forty according to the Gazette. Florida has sixty-one, according to the Age, and fifty according to the Gazette. Arkansas is credited with but two miles in the Age, and seventy-seven miles in the Gazette, a difference of seventy-five miles. In the totals the Age has 788.2 miles, and the Gazette 717 miles. In January last, when these journals published their totals, the Manufacturers' Record called attention to the wide difference in their figures at that time, and made a suggestion that the statistical editors of the two papers get together and try to reach a better understanding. This last report, which, as far as the South is concerned, is glaringly incorrect, emphasizes the suggestion which we made at that time.

Baltimore Electric Projects.

The construction of electric railway lines in and around Baltimore continues to attract much attention, and although the street-railway development in this city and suburbs within the last few years has been almost without parallel, the indications are that a large amount of capital will be invested within the next few years, and that the new mileage of trolley and other lines will be remarkably large. Over a year ago the Manufacturers' Record compiled an exhaustive article on this subject, showing the remarkable activity then in progress. At the time mentioned the majority of the street-railway companies in the city proper had changed their motive power from animal to the cable or trolley systems. Among the more important enterprises at present being promoted or under way are the following:

The Columbia & Maryland Electric Co.—The first section, from Baltimore to Ellicott City, will be completed about August 1; grading completed between Washington and Laurel, and contracts for tracklaying partly made; total length of line about thirty-two miles.

The Central Railway Co.—Extensions in the eastern part of the city; trolley system; about thirty miles.

Gwynn's Falls Railway Co.—Trolley line in western suburbs; about ten miles; three-quarters of a mile completed and in operation.

East Baltimore & Clifton Park Co.—Trolley system in northeastern suburbs; about seven miles.

Falls' Road Electric Railway Co.—Trolley system from North Charles street to Mount Washington and vicinity; total track, seven miles; work will probably begin before September 1.

Baltimore Traction Co.—Shore line trolley road; completed; two and one-half miles. Presstman street and Windsor Mill road division, about five miles; work begun.

Catonsville Construction Co.—Changing the Catonsville Short Line steam road into a trolley system; about six miles.

Baltimore, Middle River & Sparrow's Point Co.—Extension to Middle river, in the eastern suburbs; three miles; work begun.

Baltimore Traction Co.—Changing of Druid Hill avenue system from cable to electric; six miles; double track; work begun.

Baltimore Traction Co.—Extension from Waverly, in the northern suburb, to Clifton Park; about two miles.

This gives a total of 110½ miles of roads now under construction, or which are being promoted by responsible companies.

The Central Passenger Railway project referred to above has been favorably considered by the council, and only awaits the mayor's approval to become operative. The Metropolitan Railway Co. has also applied for a franchise, which, if granted, will enable it to construct a line between northwest and southeast Baltimore.

Railroad Notes.

F. K. Huger has been appointed superintendent of the Knoxville, Cumberland Gap & Louisville Company, in place of L. F. Wynne.

Jos. H. Greene, late superintendent of the Southern Railway shops, Columbia, S. C., has been appointed superintendent of motive power for the South Carolina & Georgia Company.

Thomas Richardson, formerly general passenger agent of the Florida East Coast Line, has been elected commissioner of the Southern States Passenger Association, succeeding Hon. Wm. Bailey Thomas.

C. V. Lewis has been appointed general freight agent in charge of claims and percentages of the Baltimore & Ohio Railroad. Charles E. Ways, who is at present freight agent, is still retained in his capacity.

The Cromwell Line steamship now being built at the yards of the Newport News Shipbuilding & Dry-Dock Co. will be launched about July 15. She is to be called the Creole, and will be the finest vessel of the line.

The Seaboard Railway, of Alabama, has been placed in the hands of S. T. Prince, of Mobile, as receiver. The road is thirty-one miles in length, extending from a point on the Alabama river to Tiger, in Washington county.

The Macon & Birmingham Company has reorganized and has determined to issue bonds to the amount of \$500,000, bearing interest at 5 per cent., to pay Messrs. Parsons and Edwards, who have turned the road over to the new company.

The value of the railroad property in South Carolina has not depreciated, judging by the report of the State board of equalization. According to the report of this body, the total for 1896 is placed at \$23,797,512, just \$140 less than last year.

By the new charter of the St. Louis & San Francisco Railway Co. the capital stock will be \$50,000,000. The incorporators under the reorganization are Daniel B. Robinson, Henry L. Morrill, L. F. Parker, John T. Woodruff and others.

The report that B. F. Yoakum, third

vice-president of the Gulf, Colorado & Santa Fe, is to become first vice-president of the St. Louis & San Francisco road under its reorganization, is confirmed. Mr. Yoakum's headquarters will be in St. Louis.

The Baltimore, Catonsville & Ellicott Mills Railroad Co. has given a first mortgage to the Safe Deposit & Trust Co. of Baltimore to secure the issue of \$500,000 in 20-year 5 per cent. bonds. The mortgage is made through Geo. C. Jenkins, president of the company.

The Queen Anne's Railway Co. has ordered six passenger and combination cars and twenty box and flat cars from the Jackson & Sharpe Co., of Wilmington, Del. This road is now being built between the Chesapeake bay and the Atlantic coast at Lewes, Del.

The new bridge of the Galveston, La Porte & Houston Railway Co., across Buffalo bayou, near Houston, Texas, has been completed, and trains are now running over it. It has a 228-foot draw, made of steel and resting on piers forty-seven feet high filled with concrete.

It is understood that the Southern Railway Co. will inaugurate a new service between Atlanta and Columbus, Ga., by the way of the Georgia Midland & Gulf, which it has recently secured. By the improved service, passenger coaches will be run direct between the cities without change.

Eugene C. Spaulding has been appointed corceiver of the Marietta & North Georgia Railroad Co., with J. M. Glover. It is understood that the Atlanta, Knoxville & Northern Construction Co. has practically secured the road, as at the recent sale it bid \$956,000 for the property, and is now making payments.

H. C. Orr has been appointed general passenger agent of the Kansas City, Pittsburg & Gulf Railway Co., succeeding James Donohue, who has recently resigned the position. Mr. Orr has been connected with the Chicago, Burlington & Quincy system for the last thirty years, and has of late been acting as assistant general passenger agent.

The Kansas City, Memphis & Birmingham has decided to remove a portion of its offices to Kansas City and other points from Birmingham. Among the officials affected are B. A. McGuirk, trainmaster; J. G. Pinkerton, master of transportation, will be transferred to Birmingham; office of auditor at Memphis will be abolished, also the office of superintendent of terminals.

A dispatch from Portsmouth, Va., states that a strip of land having a frontage on the Elizabeth river of 1000 feet and comprising in all about fifty-five acres, has been purchased by parties supposed to represent the New York, Philadelphia & Norfolk Railway Co. It is one of the most desirable harbor-front properties on Hampton Roads, and is supposed to be intended for the erection of freight warehouses and other terminal facilities for this company.

L. L. Finley, of Memphis, Tenn., has been appointed commissioner of the Walker County (Alabama) Coal Association. This association has been a prominent factor in arranging for the shipping of coal by vessel down the Mississippi river to New Orleans and other markets. It has made a contract with the Ella Layman Towboat Co., of Charleston, W. Va., to furnish the necessary transportation for the coal. It is expected that business will begin about August 1.

A dispatch from Henderson, Ky., states that engineers of the Illinois Central have been making examination of the

Ohio Valley Railway, and it is understood that this line may be made a portion of the Illinois Central system. The Ohio Valley road extends from Hopkinsville, Ky., to Evansville, Ind., and is about 130 miles in length. It is now being operated by John McLeod, receiver, and would be an important feeder to the Illinois Central if absorbed by that company.

Steel Tracks for Vehicles.

One of the advocates of steel tracks in the improvement of roads is Gen. Roy Stone, of the Department of Agriculture at Washington. In a recent interview he referred to the system recently described in the Manufacturers' Record, as follows:

"I believe that the ultimate solution of our good roads problem for all great thoroughfares lies in the steel highway. Undoubtedly the wearing surfaces of all highways connecting our great cities and traversed by wagons and light vehicles are to be flat steel rails. There is no greater propriety or economy in running a wagon than there would be in running a railroad train over a rough surface of earth or stone. Horseless vehicles will undoubtedly develop metal roads. The cost, to begin with, will be higher than that of stone or concrete roads, but with the present low price of steel the saving in wear would much more than compensate for the difference in cost. At the same time the saving in the expense of hauling would be from 50 to 80 per cent.

"It should consist of a double line of track, with a carriage road at either side. Wagons with heavy loads could follow one another upon it in a straight line either way, while lighter and faster vehicles could pass them by turning out occasionally into the side roads. Flat rails laid upon stringers should be the style of the track used. They should be laid level with the roadway, so that wheels might pass onto or off them without difficulty. The general form of the rail should be a shallow trough with flat bottom, and outer edges raised only enough to give a gentle guidance to the wheels. The width should be suited to the gages of all vehicles. I find that in New York and vicinity, where there is perhaps the greatest variety of road vehicles, the gages of wagons and carriages range from four feet ten inches to six feet. A rail ten inches wide would therefore be necessary to accommodate all of these gages comfortably.

"In Glasgow, about fifty years ago, flat rails eight inches wide were used in this way. They were very successful in diminishing traction. The only objection to them was that horses sometimes slipped and fell when stepping upon the smooth surface of the rails. Such a danger will be avoided if rails are rolled with indentations every few inches below the general surface. As long as our highways are to be used by horses this will be necessary, and it will not roughen the track for wheels."

The State road commissioner of New Jersey, Henry I. Budd, proposes to lay steel rails about the thickness of ordinary boiler plate, rolled in the shape of a gutter five inches wide, with a square perpendicular rim one-half inch high. It is arranged to form a conduit for water, and makes it easy for wheels to enter or leave the track. Mr. Budd says that one horse will draw on a steel track twenty times as much as on a dirt road, and five times as much as on macadam. A double-track steel highway of his design, he says, would cost \$1000 less per mile than one of macadam the same size, while a rural one-track road would cost \$5000 less, or \$2000 per mile.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

To Reorganize the Eagle & Phoenix Mills.

The first steps toward the reorganization of the Eagle & Phoenix Manufacturing Co., of Columbus, Ga., were taken at Atlanta on July 3. An informal meeting was held and devoted to discussions of plans of reorganization and rehabilitating this large property. No final action was taken as to reorganization, but a committee was appointed, consisting of the chief stockholders, to prepare a plan to present to the regular meeting of all the stockholders which is to be held at Columbus on July 22.

A Possible Textile-Machinery Combination.

For some time it has been customary for the New England cotton-machinery manufacturers to encourage the building of new mills to the extent of taking some stock in part payment for machinery, and in other cases allowing long credits. This system has been of material help in bringing about the construction of a number of Southern mills which might not have been organized had it been necessary to pay all cash for machinery upon delivery. For some little time an effort has been made to form a combination among the textile-machinery people for the purpose of discontinuing the system of taking stock in new mills, whether located South or elsewhere. The machinery people give as a reason for this that during the last few years they have taken in the aggregate a very large amount of stock in new mills not marketable as yet, and hence have found it necessary to make such a move as this. It is also proposed, should this combination be formed, to reduce the length of credits. It is believed by some, who have looked into the matter, that under such a system as this the decreased demand would force the machinery-builders back to the present system in order to keep their works busy, but they, on the contrary, hold that their best policy at present is to encourage the filling up of the mills only partially filled at present with machinery, rather than to encourage the building of new mills. A number of conferences have been held, but it seems to be uncertain yet whether the combination will be carried out, although at one time it was regarded as practically effected.

Ginning by the Roller and Saw Gins Contrasted.

The Vicksburg correspondent of the Memphis Commercial Appeal says:

"The remarkable superiority of the long-staple cotton of this portion of the cotton belt when cleaned on the roller gin, as compared with the same cotton when cleaned with the saw gin, has been the topic of some comment ever since the first experiments were made last autumn with the new gins. The beautiful silkiness of the fibre was recognizable at a glance by anyone however inexperienced, but it will be a genuine surprise to the most of persons to learn, on unimpeachable authority, that the advantages of the new process are so great as to add several cents per pound to the value of the staple. It is believed by many that when

Southern cottons are generally handled by these gins, or in sufficient quantity to cut a figure in the market, they will largely supplant the Egyptian cottons, for which at present there is a growing demand which has long been watched with a jealous eye by Southern planters. It is said the Southern long cottons, while lacking the yellow tinge of the Egyptian staple, which makes the latter preferable for some purposes, is even stronger than the latter, and therefore much better for white goods, that is to say, when it has been ginned on a roller gin, for the saw-ginned staple is not as strong as the Egyptian. The evidence as to the comparative value of the roller-ginned and the saw-ginned cotton, as given by a New England manufacturer, was substantially presented by Mr. W. L. Wells, one of the leading cotton buyers of this city, in an interview to the following purport:

"Mr. Wells premised his remarks by saying that the vast superiority of cotton ginned on a roller gin over that prepared on a saw gin was apparent to the least trained eye. The one appeared silky, smooth and even; the other was rough and altogether less attractive. The chief point of superiority was the freedom of the roller-ginned cotton from naps or kinks, which not only made a rough, but a weak yarn, and one that was difficult to handle to advantage. Quite a number of bales of the same crop of long-staple cotton had been ginned here, one-half by the roller process and the other by the saw gin, with the result, in every instance, that the roller-ginned cotton was immensely superior. In one instance, the last experiment of the kind, two bales were ginned on the one gin and two on the other, and the four were then shipped East. The difference was so great in the staple of the two lots that an eminent manufacturer of New Bedford could not believe that they were actually the same cotton. He therefore wrote Mr. Wells a personal letter, stating his disbelief in the identity of the two cottons, which he deemed impossible. This gentleman estimated that the roller-ginned cotton was worth at least four cents per pound more than the other, if not more. Mr. Wells further remarked that it was worthy of notice that this gin was the only roller gin that had ever been able to clean green-seed long-staple cotton—the *Gossypium hirsutum*, as it is known to botanists. The maximum capacity of a roller gin is only thirty-nine pounds of lint per hour, but as far less power is required to operate the machine, while it is by no means expensive, it is manifest that better results can be obtained from the same expenditure of power than would be supposed from the mere statement of the single gin's capacity. The additional cost of handling the staple in this manner, it is believed, will be about one cent per pound, a small matter, since it will add four cents at least to its value."

Textile Notes.

The Meridian Cotton Mills, of Meridian, Miss., will commence operations in a few days.

Work has been commenced on the new Oxford cotton mill at Oxford, Ala. It is to cost \$50,000.

There is a movement on foot at Greenville, Ala., by R. Y. Porter and associates to build a \$100,000 cotton mill.

The Co-operative Cotton Mills, of Meridian, Miss., a new plant recently started, expects to enlarge in the next six months.

The Athens Knitting Mill, of Athens, Ga., has been removed to Union Point,

Ga., and is now in operation, employing thirty hands.

The Clover Manufacturing Co., of Clover, S. C., is said to contemplate enlargements for next fall. Possibly a weaving plant will be added.

The secretary of state of South Carolina has received charter from the Gaffney Manufacturing Co., of Gaffney, S. C., reporting the increase of its capital stock from \$600,000 to \$800,000.

The People's Cotton Factory, of Montgomery, Ala.; the Bamberg Cotton Mills, of Bamberg, S. C., and the Colleton Cotton Mills, of Walterboro, S. C., have placed their orders for revolving flat cards and drawing-frames with the Pettie Machine Works, of Newton Upper Falls, Mass.

The Arkwright Mills, of Spartanburg, S. C., recently reported in full, have now obtained their charter. Work on the 10,000-spindle mill is now in progress. Mr. H. M. Cates is president and treasurer; R. H. T. Chapman, secretary, and Messrs. R. M. Cates, H. S. Chadwick, J. F. Cleveland and W. F. Smith, directors.

A commission for incorporation has been issued to the W. D. Wheat Co., the incorporators being Messrs. W. D. Wheat, J. A. Carroll, J. G. Wardlaw, of Gaffney City, and J. P. Wilson, of Charlotte, N. C. This is doubtless the company noted several weeks ago by the Manufacturers' Record as to erect a 10,000-spindle mill. It is proposed to use Sea Island and Egyptian cotton, spinning fine numbers from 100s to 150s for weaving into fancy cotton goods.

CARD CLOTHING.

Grades of Wire Now in Use. System of Grinding, etc.

Lowell, Mass., July 3.

Editor Manufacturers' Record:

There are several grades of card wire now in use. The most common is round wire. This grade of wire has been used very extensively for many years. After the patent process of hardening and tempering cast-steel wire came into prominence, manufacturers of card clothing turned their attention to the system of grinding, so that at the present time we have not only the surface ground, but side ground and the so-called needle point as well.

There is much to be said in favor of round wire; its strength in proportion to its diameter being great, but it is found in practice that the space between adjoining teeth being reduced so, that there is not the same capacity for the retention of notes that exist in other forms of wire.

Now, for this reason it has become the practice for several years in quite a good many card shops to grind between the teeth, so as practically to form the wire into an oblong section above the bend of the teeth. Sectional wire is not very extensively employed for carding cotton fibres. The only merit that it possesses is that it presents a sharp point to the cotton fibres, but it is claimed that this is more than compensated for by the fact that the space between the teeth is much reduced and that the strength is not so great in proportion to sectional area, as is the case with round wire.

With regard to double convex wire, it is quite apparent that this grade of wire is commending itself to manufacturers of first-class grades of yarns. With a considerable sectional area it penetrates the foundation in such a way and is of such a shape that it is firmly and effectively gripped, while at the same time its action is such that its line of strength lies in the direction of the chief strain during work.

A card tooth is pressed back by the resistance of the cotton fibres during the process of carding in a direction circumferential of the cylinder, and as the greatest dimension of the teeth is in this direction, it follows that the resistance to the thrust is provided for in the best way; also the edge presented by the tooth is uniformly a sharp one, and it is not necessary to grind it on the side to obtain it.

There has recently been placed in some of the cotton mills a grade of wire peculiar to itself. This consists of the wire being pressed flat above the bend, while the foundation remains the same as originally drawn. By a certain process, known only to the inventor and manufacturer, the wire is pressed flat at equal distances, so that when the wire is set to the foundation it presents a smooth flat surface on the sides. After it has been surface-ground the wire presents a very sharp and well-defined point. The claim for this grade of clothing is in pressing the wire flat, at the same time not seriously disturbing the fibres of steel, as is claimed to be the case with plow-ground wire. The area for gathering out the short fibres and notes are thus secured, while the process of stripping is very easy.

There are two periods when card teeth are ground. The first process is after the card teeth are set to the foundation, and the second process is after the clothing is drawn to the main cylinders and doffers in the mills. All card clothing previous to the introduction of hardened and tempered cast-steel wire was surface ground in the mills after being drawn to the carding engine. It was found after steel wire was set to the foundation that it required much more time to bring the surface of the teeth in proper condition to card cotton, so arrangements were made in all card shops to grind their wire before it was sent to the mills. There are two processes of grinding at the present time, of which special mention will be made. These are for the purpose of enlarging the space between the teeth and to leave the surface true and level.

The process of grinding card teeth to a needle point is quite different from that of side or plow ground. The first process is only intended to deal with the extreme points, while the other has for its object the reduction of the sides of the wire nearly or quite down to the bend. The latter is what is known as plow or furrow grinding, and is effected during the process of manufacture.

After the fillet has been drawn to a large cylinder that has been turned and polished perfectly true, it is then ready for the emery discs. These emery discs, which are driven at a high rate of speed, are preceded by a thin steel plow, which is made possible by the cylinder being driven at a low speed. These emery discs, as they come in contact with the card wire, grind from the sides a certain amount of steel fibres. The emery discs are solid and composed of pressed emery, quite fine. When the discs come in contact with the sides of the wire it is claimed that the action at the present time is quite easy; that is to say, the friction is not sufficient to materially injure the fibres of steel, laying compact as they do. After the grinding process comes that of polishing the sides of wire that have come in contact with the emery discs. The improved methods now employed are quite successful in removing any roughness that has been raised by the action of the emery discs.

In examining side-ground card clothing the writer has observed that some firms grind much more tapering than others. In some instances the sides of the wire are reduced quite thin at the surface or where the point of the tooth is formed.

The claim made for this extreme procedure is for opening up more area for foreign substances to gather in, and at the same time present a sharp point on the tooth.

The next point that will be considered is that of surface grinding. As previously stated, all hardened and tempered cast-steel card clothing is ground, unless otherwise ordered, before it is sent to the mill. The process of surface grinding either fillets or sheet clothing is now being done with perfect safety. For fillets, as in the case of side grinding, it is wound firmly to a large cylinder, when a traverse grinder is placed in position. This consists of a 10-inch emery wheel, two-and-one-half-inch face, driven at a speed of 1500 revolutions per minute, while the rotation of the cylinder is very slow. The emery wheel, when first applied, simply removes the rough points, after which it is set a shade closer and the grinding goes on till such time as the surface becomes quite smooth. In the case of sheet clothing the sheets are securely fastened to a smaller cylinder. The speed of this cylinder is considerable more than the one holding the fillets. The traverse grinder is similar to that grinding the fillets, and driven at the same speed, or 1500 revolutions per minute. Care has to be exercised in grinding sheets, as there is a space between each sheet, and so a slight interval occurs as the emery wheel leaves one sheet before it comes in contact with the surface of wire on the next sheet. The emery wheel touches the surface of the teeth very lightly, which in time forms a sharp point. In finishing up surface ground card clothing a fine elastic steel brush is used to remove all roughness, thus leaving the clothing in prime condition.

At the present time card cylinders are turned and polished for card fillets. Especially is this the case with all the firms building the English revolving flat cards. In fact, it may be safe to say that card fillets have been very extensively used in England in preference to sheet clothing for many years, while our manufacturers in the United States have applied sheet clothing in preference to fillets. With the advent of the revolving flat card fillets have been drawn. The very high velocity of speed of cylinders would necessitate this departure from sheet clothing, if nothing else, but it is now conceded by practical millmen that card fillets are much more superior than the old system.

After the fillets have been drawn to the cylinders and doffers in the mills, then the second process of grinding takes place. This is for the purpose of finishing the points of card teeth, so that a correct system of teasing the cotton fibres during the process of carding. This is accomplished by the use of a long oscillating grinder about five inches in diameter covered with a patent emery cloth. Very many superintendents and carders prefer to use the T. C. Entwistle traverse grinder. This is a superior machine, with long bearings and large screw. Patent emery cloth is also wound to these wheels. The emery used on either the long or short traverse grinder is quite coarse as compared to the emery wheel used to grind the rough surface.

The object of the finishing process of grinding is for the purpose of forming a corrugated surface on the ends of the teeth, and that is why a coarser grade of emery is used. There is quite a difference of opinion as to the number of emery to use for grinding card clothing prior to the process of carding cotton. I find that the number of emery used runs all the way from No. 5 English up to 40 American. I am convinced that card clothing will work to better advantage when ground light with No. 16 to 20 emery.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

The Market for Cottonseed Products.

New York, N. Y., July 7.

No event of importance has transpired since date of previous letter, general trade conditions being unchanged. Lard and tallow values are still impediments to oil improvement, whether viewed from a consumptive or valuation standpoint. If recent reports are to be credited, contrary to the expectation of those interested, cereal crops promise to surpass in their magnitude those of the previous season. The reign of low prices, it is feared, in such event, would be indefinitely prolonged; but a survey of the situation, present and prospective, would point to the fact that, regardless of crop conditions or the domestic demand for oil, the needs of the consumer abroad are far from being satiated. Manufacturers and refiners will do well to recognize this fact. Owing to the hot weather the demand for edible oil in Rotterdam has declined and very little business is doing. Exports to France continue, but new contracts are the exception rather than the rule. It is understood that at a price below the quoted figures for prime yellow, ranging from $\frac{1}{4}$ to $\frac{1}{2}$ cent, a very considerable volume of business could be transacted; but holders are firm, and, excepting in the case of dock lots just arrived, the prompt sale of which would obviate cooping expenses, otherwise unavoidable by reason of the hot weather, holders are firm in their views and refuse to shade current quotations. Apart from the dullness the market displayed in the way of exports, domestic trading was still further retarded by the intervention of the holidays. Choice butter oil is scarce and in better request, both here and at the West, while soapmakers and lard compounders evince no interest in their special grades. At the close prime yellow exhibited signs of weakness, while off-grade yellow is dull and quoted nominally at the subjoined prices. Receipts of crude here are limited, while the total for the week is well below the average. Exports amounted to 4600 barrels, France, Belgium and Italy being the chief purchasers. The political questions, which are now receiving more than the ordinary share of the people's attention, have added their quota toward checking business. The closing prices are for crude prime, 20 to 21 cents; at the mills, 16 $\frac{1}{2}$ to 18 cents; prime yellow, 24 $\frac{3}{4}$ cents; off-grade yellow, 24 $\frac{1}{2}$ to 24 $\frac{3}{4}$ cents; prime winter yellow, 31 to 33 cents; butter grades, 25 to 27 cents; prime white, 27 to 27 $\frac{1}{2}$ cents, and soap stock, $\frac{5}{8}$ cent per pound. Liverpool quotes refined oil at 16 $\frac{1}{2}$ steady. Soap stock is receiving considerable attention from abroad, judging from the number of inquiries arriving.

Concerning cake and meal, there is nothing new to record. Exports are light, owing to the fact that many of the mills are cleared out of stocks. The demand abroad is fairly well maintained, as are prices also. From New Orleans 6000 bags of seed have been shipped to Liverpool, while the first cargo of delinted seed ever exported from the Atlantic seaboard left Wilmington, N. C., recently for Liverpool, the American Manufacturing & Exporting Co. shipping same. This company is preparing to ship 100 tons daily, commencing October 1.

Cottonseed-Oil Notes.

The Terrell Cotton Oil Co., of Terrell, Texas, was chartered last week. The capital stock is \$50,000. The mill and gin is to be located at Terrell, in Kaufman county. The incorporators are R. J. Manning, of Terrell; J. B. Wilson and E. J. Gannon, of Dallas.

Reports from United States consuls in Germany indicate that the oleomargarine bill, which passed the Reichstag on the 2d inst., if it receives the approval of the Bundesrath, will have a serious effect upon certain American industries, and principally upon the cottonseed-oil export trade. The new law is severe in its terms, and is intended to prevent the competition of artificial butter with the real article, although its nominal purpose is to raise revenue.

The exports of cottonseed oil from the port of New York for the week ending July 3 were 233,500 gallons, and since September 1, 1895, they aggregated 8,516,683 gallons; from New Orleans 2500 gallons were exported, and for ten months 2,996,567 gallons, and from Baltimore 20,140 gallons, and since September 1, 1895, they aggregated 439,438 gallons. The shipments of cottonseed oil for the corresponding months of the season of 1894-95 were: New York, 10,784,035 gallons; New Orleans, 4,723,000 gallons, and Baltimore, 1,332,215 gallons.

Cottonseed products at New Orleans are reported quiet, with values unchanged. Prime crude oil in bulk, 17 cents; prime summer yellow in barrels, 23 cents; meal, \$17 per short ton; cake, \$19 per long ton for export. Receivers' prices are reported by the daily papers as follows: Cottonseed, 89 per ton of 2000 pounds net to the mills, no commission of any kind to be added; cottonseed meal jobbing at depot, \$17.25 to \$17.50 per short ton of 2000 pounds; for export per long ton of 2240 pounds f. o. b., \$19.25 to \$19.50 for current month; oilcake for export, \$19.50 to \$19.75 per long ton f. o. b.; crude cottonseed oil at wholesale or for shipment, strictly prime in barrels per gallon, 19 to 19 $\frac{1}{2}$ cents; loose per gallon, 16 to 17 $\frac{1}{2}$ cents, according to location of mill; refined cottonseed oil, prime in barrels per gallon at wholesale or for shipment, 23 to 24 cents; cottonseed hulls delivered per 100 pounds, according to location of mill, 20 to 25 cents; foots, 1 to 1 $\frac{1}{4}$ cents; linters, according to style and staple—A, 3 $\frac{1}{2}$ to 3 $\frac{3}{4}$ cents; B, 3 to 3 $\frac{1}{2}$ cents; C, 2 $\frac{1}{2}$ to 2 $\frac{3}{4}$ cents; ashes, none.

The Columbia Duck Mill.

A series of articles is being published by the Columbia (S. C.) State on the different factors which have developed that city. The ninth article is devoted to the cotton manufacturing interests of the city. Referring to the Columbia Mills, it states that 1000 bales of cotton per month are now used in the manufacture of duck and employment is given to nearly 700 hands. It was the first cotton mill in the world to use electricity as motive power; electricity is also used for operating cooling fans and in other ways promoting the hygienic conditions of the buildings. The trial of electric power has resulted in its complete success. Although the cost is less than steam power, General Manager Oliver states, according to the article, that the results are so satisfactory that he would prefer electrical power even at more expense than steam. The mill was built with a capacity for 30,000 spindles and 750 looms.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving the character of machinery needed.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record.

Baltimore, Md., July 9.

In the local phosphate market there is very little doing, and the demand from manufacturers is only moderate. Out-of-town buyers have been in the market this week, and are purchasing for future delivery. The advices from mining sections are without any special feature, the movement in South Carolina being steady and prices firm, with a moderate demand from both domestic and foreign sources. At Charleston, S. C., quotations range as follows: Crude phosphate, \$3 at the mines; hot-air-dried, \$3.25 f. o. b. Ashley river, and \$3.45 city; ground rock in bulk, \$5.50 f. o. b. vessel at city. In Florida the shipments of rock for June show a falling off as compared with other months, and the total exports for the fiscal year are less than that of 1894-95, attributable, of course, to the depression in the market. For the current month prospective shipments from the ports are expected to be much larger than those of June. In the local market the demand for vessels is light and rates on phosphate unchanged, with no charters reported. In New York during the week there has been some inquiry for sail tonnage, while for steamers the demand is limited. The berth market is firm, with rates unchanged. Among the phosphate charters reported are the following: A bark, 719 tons, from Port Tampa to New York with phosphate rock on private terms; two Spanish steamers, 1135 tons and 2010 tons, from a Southern port to the United Kingdom or Continent with phosphate on private terms; a schooner, 485 tons, from New York to Baltimore with phosphate at 92½ cents; a British steamer, 1180 tons, from Tampa to Stettin with phosphate rock on private terms, August; a British steamer, 1694 tons, from Savannah to Hamburg with phosphate at 13½, August 15 to September 15, and a British steamer, 1556 tons, from Fernandina to Rotterdam with phosphate at 14½, July.

Fertilizer Ingredients.

The market for ammoniates is firm and fairly active, with a good general inquiry and prices well sustained. There is considerable business doing for future delivery. The demand for blood and tankage is better, and prices show a hardening tendency. There is a fair inquiry from Southern buyers, and some sales are reported for that section during the week. There is a fairly active demand for nitrate of soda, and prices are firm. Spot stock in New York available at \$1.72½ to \$1.75 was picked up and \$1.72½ offered for 30,000 bags and refused. The quotations at the close were \$1.77½ for spot and \$1.80 to \$1.85 for forward delivery.

The following table represents the prices current at this date:

Sulphate of ammonia, gas....	\$2 30¢
Sulphate of ammonia, bone....	2 15¢
Nitrate of soda.....	1 85¢ 1 90
Hoof meal.....	1 55¢
Blood.....	1 65
Azotine (beef).....	1 60
Azotine (pork).....	1 65
Tankage (concentrated).....	1 55¢
Tankage (9 and 20).....	1 55 and 10
Tankage (7 and 30).....	15 50¢
Fish (dry).....	19 00¢
Fish (acid).....	10 00¢ 11 00

Phosphate and Fertilizer Notes.

The British steamship Avalon arrived at Fernandina, Fla., on the 5th inst. from Philadelphia, and is loading phosphate for Hamburg.

Mr. George J. Scammell, of Orange City, Fla., will establish a fertilizer factory at Linton, Fla. The supply of muck, fish scrap, etc., in the vicinity makes the locality a very desirable one for such an enterprise.

The British steamship English sailed

from Tampa, Fla., on the 30th ult. for Hamburg via Norfolk with 3230 tons of phosphate from the Florida Engineering and Lake Hancock mines. The British bark Mount Vernon sailed from the above port on the 1st inst. with 820 tons of phosphate from the Land Pebble Phosphate Co.

The shipments of phosphate from the port of Fernandina for the month of June were as follows: Steamship Nymphae for Aberdeen with 2620 tons, shipped by Dunnellon and Pebble Phosphate Companies, and the steamship Vivian for Hamburg with 2923 tons by B. Arentz & Co.—total 5543 tons; previously reported 83,552, making a total for six months ending June 30 of 89,095 tons. The prospective shipments for July are 12,000 tons.

The shipments of high-grade Florida phosphate rock from the port of Savannah, Ga., as reported by J. M. Lang & Co., for the month of June, 1896, were as follows: Steamship Arde for St. Louis du Rhone, 700 tons, by the Anglo-Continental Guano Works; steamship Glanystwyth for Rotterdam with 2430 tons by J. M. Lang & Co., and steamship Corona for Genoa with 1300 tons by Anglo-Continental Guano Works—total 4430 tons; previously reported 33,249 tons, making a total for six months ending June 30 of 37,679 tons.

Mr. K. B. Harvey, deputy collector of the port of Punta Gorda, Fla., reports the shipments of phosphate from that port for the month of June, 1896, by the Peace River Phosphate Mining Co., as follows: Barkentine Harriet S. Jackson with 650 tons and schooner Lizzie M. Eels with 140 tons for Mobile, Ala.; steamship Leonora for King's Lynn, England, with 2909 tons; schooner Talofa for Baltimore, Md., with 1658 tons, and barkentine Elmeranda for Wilmington, N. C., with 950 tons—total for the month 6397 tons; previously reported 30,375 tons, making a grand total since January 1, 1896, of 36,772 tons, of which 13,069 tons were domestic and 23,703 were foreign shipments.

During the fiscal year of 1895 eighty-four foreign vessels entered at Tampa, Fla., and cleared with 133,745 tons of phosphate. During the same period 285 coastwise vessels entered and a number of them cleared with phosphate. During the fiscal year just ended seventy-nine foreign vessels entered and took out 99,737 tons of phosphate. During the same time 231 coastwise vessels entered and carried out a large quantity of phosphate. The figures show a falling off in both entries and clearances. The cause is, of course, attributable to the general depression in the phosphate market. The following shipments of phosphate are reported for the month of June, 1896: Anglo-Continental Phosphate Co., 3000 tons of pebble for Halsingborg; J. H. Packard, 2780 tons of hard rock for Harborg; Palmetto Phosphate Co., 1524 tons of pebble for Baltimore; Florida Phosphate Co., 3170 tons of hard rock for Landskrona; Palmetto Phosphate Co., 1640 tons of pebble for Baltimore; J. H. Packard, 3211 tons of pebble for Harborg, and the Land Pebble Phosphate Co., 819 tons of pebble for Swansea—total for the month 16,144 tons.

Iron Markets.

Cincinnati, Ohio, July 3.

The past week has been one of great irregularity in both prices and orders. There have been quite a number of large orders placed where consumers, having confidence in the future, and realizing that the current prices are extremely low, feel little or no timidity in providing

themselves with a supply of iron through the balance of the year. Consumption generally has not improved any; indeed, in some sections, it has fallen off heavily. The disagreement between the Amalgamated Association and the Rolling Mill Operators affords the mill proprietors an opportunity to make the annual repairs and straighten up their stocks and accounts as well as their properties. There is no improvement in car building, but some large pipe contracts give to that industry improvement. While there are many pessimists predicting lower prices than ever prevailed and a protracted period of prostration, there are perhaps as many who take a hopeful view of the future and expect a reaction even in face of the exciting political campaign impending.

We quote for cash f. o. b. cars Cincinnati:

Southern coke No. 1 foundry....	\$10 25¢	\$10 50
Southern coke No. 2 foundry....	9 75¢	10 00
No. 1 soft.....	9 75¢	10 00
Lake Superior coke No. 1.....	12 00¢	12 50
Lake Superior coke No. 2.....	11 50¢	12 00
Hanging Rock charcoal No. 1.....	15 50¢	16 50
Tennessee charcoal No. 1.....	13 00¢	14 00
Jackson Co. silvery No. 1.....	13 00¢	14 00
Southern coke, gray forge.....	9 00¢	9 25
Southern coke, mottled.....	9 00¢	9 25
Standard Alabama car-wheel.....	14 75¢	15 50
Tennessee car-wheel.....	13 50¢	14 50
Lake Sup. car-wheel & malle.....	14 75¢	15 25

New York, N. Y., July 3.

A flat and somewhat panicky stock market and the gloomy forebodings of financiers over the strength shown by the silver men at Chicago have prevented any improvement in the iron market. The only feature worthy of note is the disinclination, or perhaps inability, of Virginia and Pennsylvania furnaces to follow the decline any further and the number of foundries that are running out to the end of previous contracts, and are compelled to buy in a small way to keep going.

Until quite recently, Alabama irons were held above figures accepted by some Virginia and Pennsylvania furnaces. But the Alabama makers now feel the need of business in the East, and are making figures to get it. If account is taken of the advanced wages paid by the furnaces, it is safe to say that current prices for foundry and forge pig are the lowest on record.

We quote for cash f. o. b. docks or cars New York:

No. 1 X standard Southern....	—@	\$11 50
No. 2 X choice Virginia, such as Shenandoah.....	—@	12 25
No. 2 X Alabama or Virginia.....	—@	11 25
No. 1 soft Ala. or Virginia.....	—@	11 25
No. 1 X lake ore coke iron.....	—@	14 00
No. 2 X lake ore coke iron.....	—@	13 50
Lake Superior charcoal.....	15 85¢	16 35

Philadelphia, Pa., July 3.

The pressure to sell increases in some quarters and eases up in others. There is a slow but very certain curtailment of output of pig iron. The heavy pipe contracts in Brooklyn and New York, which have been watched closely by the large pipe shops in this district, have not been decided yet, and it is still uncertain whether steel-riveted pipe will not be selected by the Brooklyn engineer, because of its lower initial cost. General foundry work lags, and people are much interested in politics. No important transactions are reported the current week, but there has been a good run of minor business.

We quote for cash f. o. b. Philadelphia docks:

No. 1 X standard Alabama.....	—@	\$11 50
No. 2 X standard Alabama.....	—@	11 00
No. 1 X standard Virginia.....	—@	12 00
No. 2 X standard Virginia.....	—@	11 50
No. 1 X lake ore iron.....	—@	14 00
No. 2 X lake ore iron.....	—@	13 50
Lake Superior charcoal.....	—@	15 85
Standard Georgia charcoal.....	16 25¢	17 00

Chicago, Ill., July 3.

Inquiries for iron have been few during past week, and a full succeeds the moderately brisk demand of the two weeks preceding. Very little will be done now until after the democratic (or silverite) convention about to convene in our city. "Sufficient unto the day is the evil

thereof." In our next report we may venture to speak further.

It is understood that many malleable concerns who were in the market recently for considerable tonnage are still waiting for prices to meet their expectations.

We quote as follows:

Lake Superior coke No. 1 fdy....	—@	\$11 50
Lake Superior coke No. 2 fdy....	—@	11 00
Lake Sup. charcoal, Nos. 1 to 6.....	13 50¢	14 50
Ohio Scotch No. 1.....	15 00¢	15 50
Jackson Co., O., silvery No. 1.....	14 50¢	16 50
Alabama silvery No. 1.....	—@	12 25
Southern coke No. 1 foundry....	—@	11 00
Southern coke No. 2.....	—@	11 10
Southern coke No. 3.....	—@	10 75
Southern coke No. 1 S.....	—@	11 10
Southern coke No. 2 S.....	—@	11 00
Mannle.....	12 75¢	13 00

Boston, Mass., July 3.

Sales continue very slow and prices very low. Representatives of some Virginia furnaces deny having made quotations recently reported by buyers, and say that nowhere near as low prices can be had from Virginia as has been claimed. Alabama brands, which have been ruling above the market, and have partly disappeared from use in consequence, are again in evidence. The New England malleable concerns have in the past few weeks covered their requirements for the year and at the lowest prices on record for malleable coke iron. Lake Superior charcoal brands are firmly maintained, with the result of some decrease in consumption.

St. Louis, Mo., July 3.

The orders placed during the past week have been for small lots at cut prices. There is a feeling of uneasiness here among the buyers as to the outcome at Chicago. While St. Louis is largely interested in silver, the majority of the business men here are not anxious for free silver, and will not make large purchases until financial matters are in some settled condition.

We quote for cash f. o. b. St. Louis:

Southern coke No. 1.....	—@	\$11 00
Southern coke No. 2.....	—@	10 50
Southern coke No. 3.....	—@	10 25
Southern gray forge.....	—@	10 00
Southern charcoal No. 1.....	—@	15 00
Ohio softeners.....	—@	16 00
Lake Superior car-wheel.....	—@	15 25
Southern car-wheel.....	—@	16 00
Genuine Connellsville coke.....	—@	5 20
West Virginia coke.....	—@	4 70

ROGERS, BROWN & CO.

The second step toward the operation of its main lines by electricity was made June 26 by the New York, New Haven & Hartford Railroad Co. in the extension of the electrical equipment of the Nantasket Beach line as far as East Weymouth, three and one-half miles along the main line of the South Shore branch of the Plymouth division, of which J. C. Sanborn is superintendent. In determining upon this extension the overhead trolley system in use on the Nantasket Beach branch was abandoned and the third-rail method of contact adopted as the most readily adaptable to ordinary railroad requirements. This is the first time in the history of railroads that the main line of a surface steam railroad has been operated by electricity taken from a conductor laid upon the ground, as the Nantasket branch, inaugurated just twelve months ago, was the first steam road in the world to which electricity was solely employed as the motive power. While the third-rail system for electric roads is not new, it being in use on the West Side & Lake Street Elevated Railway in Chicago, the rail being set outside the track, this is the first instance of a third rail being laid upon the permanent way of a trunk steam road between the rails of the service track. All the preliminary work was carried out at the Schenectady works of the General Electric Co.

The Merchants' Exchange, of Charleston, S. C., has re-elected L. P. O'Neill, president; C. Wulbern, vice-president, and John M. Baker, secretary and treasurer.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Lumber Directory.

Readers of the Manufacturers' Record who may be in the market for lumber of any description are recommended to the directory of Southern lumber manufacturers and dealers which appears among the advertising pages.

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record.

Baltimore, Md., July 9.

The local lumber market has ruled exceedingly dull during the past week, and the volume of business much lighter than usual. In the yellow-pine trade kiln-dried North Carolina is selling more freely, but for air-dried material there is little or no inquiry. Prices are easy, and stocks are fully ample for the demand. Box manufacturers and planing-mill men are purchasing very sparingly, and from other sources there is no inquiry. In white pine business is somewhat improved, and prices are firm for all desirable material. Cypress is in moderate demand, and prices nominally steady. In hardwoods the market shows very little improvement, and the volume of business is confined to a few orders from out of town, the local trade being very light. The demand for export is only moderate, and advices from Europe are not such as to warrant shippers making any new business. Planing mills, box factories and other woodworking concerns report business as very quiet, with, however, a better prospect later on.

The following list represents the prices current at this date:

[The quotations for yellow pine are for cargo lots, and for all hardwoods the figures indicate values for choice car lots.]

VIRGINIA AND NORTH CAROLINA PINE	
5-4x10 No. 2, kiln dried.....	\$16 00/18 00
5-4x12 No. 2, kiln dried.....	17 50/18 50
4-4x10 No. 1, kiln dried.....	15 00/16 50
4-4x12 No. 1, kiln dried.....	16 00/16 50
4-4 nar. edge, No. 1, kiln dried.....	13 50/14 00
4-4 wide edge, No. 1, kiln dried.....	17 50/18 50
6-4x10 & 12, No. 1, kiln dried.....	23 00/24 00
4-4 No. 1 edge floor, air dried.....	10 00/11 00
4-4 No. 2 edge floor, air dried.....	10 00/11 00
4-4 No. 1 12 in. stock, air dried.....	13 50/14 50
4-4 No. 2 12 in. stock.....	11 50/12 50
1-4 edge box or rough wide.....	8 00/9 00
1-4 edge box do. (narrow).....	7 00/8 00
4-4 edge box do. (narrow).....	6 50/7 50
4-4 12 inch rough.....	9 00/10 00
3/4 narrow edge.....	5 00/6 00
3/4 wide.....	7 00/8 00
3/4x3/4 and 10 1/2 inch.....	8 00/9 00
Small joists, 2 1/2-12, 14 and 16 long.....	7 50/8 50
Large joists, 3-16 long & up.....	8 50/9 00
Scantling, 2x3, 2x4 and 3x4.....	8 00/8 50

WHITE PINE.

1st and 2d clear, 4-4, 5-4, 6-4 and 8-4.....	48 00/49 00
3d clear, 4-4, 5-4, 6-4 and 8-4.....	43 00/44 00
Good edge culls.....	14 00/15 00
Good stock.....	16 00/17 00

CYPRESS.

4-4x6, No. 1.....	18 00/20 00
4-4x6, No. 2.....	12 00/14 00
4-4x6, 16 feet, fencing.....	11 00/12 00
4-4x6, rough.....	9 00/10 00
4-4 rough edge.....	8 00/9 00
1-4 edge, No. 1.....	16 00/18 00
4-4 edge, No. 2.....	11 00/12 00
Gulf, 4-4, Nos. 1 and 2.....	28 50/30 50
Gulf, 6-4, Nos. 1 and 2.....	31 50/32 50

HARDWOODS—WALNUT.

5-8, Nos. 1 and 2.....	65 00/75 00
4-4, Nos. 1 and 2.....	80 00/90 00
5-4, 6-4 and 8-4.....	85 00/95 00
Newell stuff, clear of heart.....	85 00/100 00
Culls.....	20 00/30 00

OAK.

Cabinet, white and red, Southern, plain-sawn and good, 1 and 2, 8 inches and up, 12 to 16 feet long, 4-4.....	30 00/34 00
Quartered white, Western, 1 and 2 quality, all figured, 6 inches and up wide, 4-4.....	53 00/55 00
Culls.....	10 00/15 00

POPLAR.

Nos. 1 and 2, 5-8.....	24 50/25 50
Nos. 1 and 2, 4-4.....	28 00/30 00
Nos. 1 and 2, 6 and 8-4.....	32 50/33 50
Culls.....	13 00/16 00

SHINGLES.

Cyp., No. 1 b'rts, sawed, 6x20.....	7 25/7 75
No. 1 saps, sawed, 6x20.....	5 50/6 50
No. 1 hearts, shaved, 6x20.....	6 50/7 50
No. 1 saps, shaved, 6x20.....	5 25/5 50

LATHS.

White pine.....	2 70/2 75
Spruce.....	2 15/2 25
Cypress.....	2 15/2 25

Charleston.

[From our own Correspondent.]

Charleston, S. C., July 6.

The week under review has been short-

ened by the occurrence of the national holiday, and the lumber market has been quiet, with a steady demand. Mills are operating as usual, and have plenty of orders to keep them running for some time to come. The range of prices continue very low, and while values are generally firm, no material advance has occurred. At the close of business on Friday last the better grades of lumber were steady, and quotations current in the market were as follows: Merchantable, \$14 to \$16 for city-sawn, \$12 to \$14 for railroad; square and sound, \$9 to \$13 for railroad, \$8 to \$11 for raft; dock timber, \$1.50 to \$6.50; shipping, \$8.50 to \$10.50. There is a good demand for the better grades of shingles, and shipments are more active than usual from the mills. Cargo lots are selling from \$5 to \$7 per thousand. There is a brisk inquiry for crosssties, and quite an improvement has taken place in this industry during the present year. Among the shipments of lumber during the past week the following are recorded: Schooner Emma Knowlton for New Haven with 300,000 feet. For New York the schooner I. H. Parker cleared with 400,000 feet, schooner Wilson & Hunting 250,000 feet, and by the Clyde steamers one var of shingles and 83,000 feet of lumber. The total shipments of lumber to coastwise ports since September 1, 1895, amount to 59,958,817 feet, against 62,388,127 feet for the corresponding period last year. The foreign shipments were all to the West Indies, and amounted to 2,040,685 feet, against 878,623 feet last year. Lumber freights are firm, with no change in rates, and to New York and sound ports \$4.62 1/2 to \$5 is the range. A charter was reported in New York last week of a schooner from Georgetown, S. C., with crosssties on private terms.

Savannah.

[From our own Correspondent.]

Savannah, Ga., July 7.

The movement in lumber during the month of June showed considerable activity, and the shipments from this port were larger than any previous month during the present year. There has been a prompt and active demand for the better grades of lumber, and at all milling sections business has been fairly satisfactory. These conditions apply to all the nearby ports of Georgia and also to interior milling sections. At Darien and Brunswick shipments of lumber and timber, both coastwise and foreign, are holding up well, and while prices show no material advance, they are firm at quotations. The demand for crosssties has been quite brisk, and shipments of staves large. The market at the close on Friday last was firm, with quotations as follows: Ordinary sizes, \$11 to \$12; difficult sizes, \$13 to \$18; flooring boards, \$15 to \$22; shipstuf, \$16.50 to \$20, and sawn ties \$10. During the past week business has been restricted by the occurrence of the national holiday, and the volume of trade lighter than usual. Among the shipments reported is the schooner Emily F. Northam for Philadelphia, 286,742 feet of yellow-pine lumber; steamship D. H. Miller for Baltimore with 97,925 feet of pitch-pine lumber, and the Berkshire for the same port with 75,915 feet and other cargo; steamship City of Macon for Philadelphia with 60,580 feet and other cargo; steamship Gate City for Boston with 9008 feet and other cargo, and for New York steamship Birmingham with 90,933 feet of lumber, and steamship City of Augusta with 96,576 feet of lumber and 85,000 shingles. Lumber freights are steady, with no change in rates. Foreign business is more or less nominal. The rates from this and nearby Georgia ports are quoted at \$4.25 to \$5.50 for a

range including Baltimore and Portland, Me.; railroad ties, basis 44 feet, 16 cents; timber rates 50 cents to \$1 higher than lumber rates; to the West Indies and Windward, nominal; to Rosario, \$12 to \$13; Buenos Ayres and Montevideo, \$10 to \$11; to Rio Janeiro, \$14; to Spanish and Mediterranean ports, \$11.30 to \$11.50, and to United Kingdom for orders nominal for lumber at £5 5/ per standard. The charters reported in New York last week were as follows: A schooner, 521 tons, from Brunswick to Philadelphia with lumber at \$4.25; a schooner from Brunswick to Boston with ties at 15 cents, and a schooner from Darien to New York with lumber at \$4.50.

Jacksonville.

[From our own Correspondent.]

Jacksonville, Fla., July 6.

The shipments of lumber and other wood products from this port for the month of June show a decrease as compared with the previous month. The numerous arrivals during the last ten days of June accounts to some extent for the shortage. These vessels have nearly all taken on their cargoes, and a number cleared for their destination last week. The movement in every branch of the lumber industry of this port has been fairly active, and at all milling points, both here and nearby, business is very brisk and lumbermen are generally well satisfied with the situation. The demand for the better grades of lumber is active, while prices are very steady, but not quotably higher. In crosssties there has been a good movement during this year, and this industry shows a healthy and steady growth, there being a good demand from Northern points for all that are manufactured. During the month of June the coastwise exports were as follows: 5,900,000 feet of yellow-pine lumber, 350,000 feet of cypress lumber, 24,900 bundles of shingles, 1,506,000 shingles in bulk and 31,000 crosssties. The foreign exports of lumber were 303,653 feet of lumber, valued at \$4140.53. Among the lumber clearances for New York during the past week were the schooners John H. Cross with 310,000 feet of yellow-pine lumber; E. J. Sawyer with 280,000 feet; John M. Brown with 365,000 feet; the Clyde steamer Comanche cleared with 350,000 feet, 4000 crosssties and 2700 bundles of shingles; steamer George W. Clyde cleared with 200,000 feet, 4000 crosssties and 20,000 shingles. The schooner Charlotte T. Sibley sailed with 300,000 feet of yellow-pine lumber. Freights are generally firm and the offerings of handy-sized vessels moderate. A charter was reported in New York yesterday of a schooner, 217 tons, to load at Palatka with dry cypress lumber on private terms.

Mobile.

[From our own Correspondent.]

Mobile, Ala., July 6.

At this period of the season the volume of trade in all departments of the lumber and timber industry is generally light, but this season, while business is quiet, there is still a considerable movement. The general reports from milling sections show a fairly active demand for material, and orders coming in freely. The outlook for a good fall trade is very encouraging, and millmen are, as a rule, looking forward to a busy season. The timber trade continues moderate and shipments are going forward as usual. Reports from the British markets are not so encouraging to the yellow-pine trade, there being an accumulation of stock, giving an easier tone to prices. The foreign hardwood market shows an improvement in business, with prices steady and a fair demand prevailing. In the

local market there is a good inquiry for sawn timber at 11 to 11 1/2 cents per cubic foot, 40-foot basis. There is some demand for cypress lumber at 5 to 8 cents per cubic foot. Cedar is steady at 25 to 35 cents per cubic foot. Hewn timber, when placed upon the market, will bring 11 1/2 to 12 cents on basis of 100 cubic feet, average B1 good. Among the clearances during the week the following vessels are reported: Ship Mathilda for Sharpness with 46,000 cubic feet of hewn timber, 28,416 cubic feet of sawn timber and 342,000 feet of lumber; the schooner Kenney cleared for Mexico with 170,000 feet of lumber; steamer Sumiya for Bluefields with 15,000 feet, and steamer Nicaragua for Livingston, Guatemala, with 8000 feet. The total shipments of lumber from this port since September 1 amount to 52,077,102 feet, against 49,737,789 feet for the corresponding period last year. At Pensacola the volume of trade in June was very satisfactory, the demand being fairly active for both lumber and timber. The shipments during the past week were 269,000 cubic feet of sawn timber to Great Britain, 1,500,000 feet of lumber for Rio Janeiro, 423,000 feet for Rio Janeiro and 1,600,000 feet of lumber for Europe. In freights the market is steady, with rates unchanged. A schooner, 635 tons, was chartered last week from Pensacola to New York at \$5.50. Rates on lumber from Mobile are quoted \$5.50 to \$6 per 1000 M, Spanish gold; coastwise, \$5.50 to \$6; River Platte, \$10.50 to \$11, American gold, and Mexico, \$7.00 to \$7.50.

Beaumont.

Beaumont, Texas, July 4.

There is no animation nor anything else in the trade in lumber in this section of the country. The demand has not fallen off any, but this is not saying much, for ever since April the call for stock has been extremely light, just enough to enable dealers to fill a bill for a wood-shed without sending in a special order for it. The local trade—by which is meant orders from dealers—is about as dead as it can well get. Various reasons have contributed to this state of affairs, among which may be mentioned, perhaps, as the greatest the drought that is prevailing in this State. In some sections rain has fallen, but at scarcely any point has enough fallen to insure a good crop. Cotton may hold on a little longer before being affected by the rain, but not for a great while. Some few orders have come in during the present week, mostly for one to two cars from a dealer here and there, but nothing like a good order has been received by any of the mills.

The mills of this city, while not being loaded with orders from the State dealers, are certainly well fixed on saw bills, most of which are for export. There is something like 13,000,000 feet on the books of the mills here, which is all for export. These orders are for shipment to Africa, South America and Europe, and also Mexico, which probably will take the largest portion. The Reliance Lumber Co. this week refused an order for 300,000 ties—which is nearly 10,000,000 feet—because the price did not suit; so that from this it may be inferred that unless prices are satisfactory the most desirable sawing will be refused. While this is a good showing, it must not be thought that the mills of this point have all the export business. At Orange the same condition of affairs prevails. The mills at that point are shipping largely to New York and to Boston.

Perhaps the most pleasing feature of the export business is represented by an order that was booked by a mill here a little while ago, and which calls for some 1,700,000 feet of what is known as "yard

stock" in this section. This consists of 2x4, 2x6, 2x8, 4x4 and 4x6 size, and is the hardest material to get rid of that the mills make in this district. This material is to go to London, and if it proves acceptable to the buyers there large orders will be the result. Should this be the case, anyone can readily see what a tremendous effect this will have on the local trade throughout the State, for the mills will then be, in a measure, independent of them, inasmuch as they can get all the sawing for export they want, and if there is a call for this yard stock, which is unavoidably made in getting out timbers, then the mills will have a good outlet for all of the lumber they manufacture.

The mills up the East Texas and on the Kay-See, roads tributary to this point, are beginning to feel the effect of the export demand, for they have all got a slice of the business. Capt. John McKinnon and Mr. George Baneroff, of Orange, were over this week, making enquiries as to the export requirements, and it is presumed they will accept trial cargoes, as they received very favorable reports from the mills here.

A Russian bark, the "Melusine," 950 tons, has been chartered by the Reliance Lumber Co. for its South African cargo, which was recently booked. The vessel is expected to reach here in about five to six weeks.

Today, in honor of the "glorious Fourth," the mills all shut down to give their employes a chance to observe the day, which is the first time in the history of Beaumont that the day has been observed with much spirit.

Mr. W. A. Fletcher, of the Texas Tram & Lumber Co., has returned from Kirbyville, where he has been for several days superintending the operation of the log-rolling and hauling machine he recently completed. Mr. Fletcher reports fair progress made and is well satisfied with his invention. He says it will require a few days yet to allow his crew to become trained before the best results will be seen.

Mr. William Weiss, president of the Reliance Lumber Co., left Thursday morning to be gone several days in the East.

The Woodworth Lumber Co., of Woodworth, La., has been placed in the hands of a receiver, who will, however, continue the business.

Two very large barges, owned by Clarke & Co., of Galveston, were towed up to this city from Sabine Friday, and will load with railroad material for one of the Mexican railroads.

Mr. A. Gilmer was out in the State during the week on a still-hunt for orders. He reports that he was as successful as he expected, for, from the condition of the country, he was not looking for much business.

B. S. WOODHEAD.

St. Louis.

[From our own Correspondent.]

St. Louis, Mo., July 6.

The usual midsummer dullness seems to have settled down upon the general lumber market and business is remarkably quiet, while orders coming to hand are few and generally for small quantities. There is not much snap or vigor to the yellow-pine trade, and while the volume of business at the moment is light, it exceeds that of last year. The receipts and shipments as given by the Lumber Exchange for June show that both were larger than for the corresponding month last year. Prices for yellow pine continue very low and show a very narrow margin of profit. The movement in white pine has been somewhat better during the past week, and the local trade has kept up fairly well, while the rush of orders to repair damages caused by the

recent tornado is about spent. There is a fair demand from out-of-town parties, and country orders are coming in slowly, while the outlook is generally encouraging for good crops, with a corresponding trade in the autumn months. There has been a good movement in hardwoods, and mills are generally well supplied with orders. The demand at the moment is principally from car shops and implement factories, while bridge and railroad material are in demand. There is a good demand for quartered oak, but prices are a little easier than they were during the spring. Ash has been in good request, with light receipts. There is some movement in poplar of the upper grades, while for low grades there is not much demand. The movement in walnut and other woods is light, and for the next sixty days trade will likely continue of moderate volume. The receipts of lumber here for the week ending the 1st inst. were 1555 cars by rail and 905,000 feet from the lower rivers, compared with 1075 cars and 188,000 feet for the corresponding week of last year. The shipments were 875 cars, against 508 cars a year ago.

Lumber Notes.

The Campbell Lumber Co., on the Gulf, Colorado & Santa Fe Railroad, near Conroe, Texas, is pushing work on its new saw-mill plant.

A. D. Starbird, of Apopka, Fla., is shipping 200,000 orange-box heads to Mexico. He has bought the novelty works at Tampa, Fla., and will establish a plant at Miami.

The Emerson Co., of Baltimore, have closed a contract with Messrs. Landon, Kent & Co. for one of their compression dry-kilns, with a capacity of 10,000 feet of poplar per day.

The Delta Cooperage Co., of Philia, Miss., is replacing its circular outfit with a complete band mill. With the new mill it will be able to furnish an especially high grade of lumber.

The lumber plant of John Coughenour, at Scotland Neck, N. C., which was burned two months ago, is being rebuilt. The plant will be larger and better equipped than ever before.

It is reported that L. E. Brown, of McMinnville, Tenn., an extensive cedar lumber dealer, will establish a cedar lumber-yard in Chattanooga, Tenn. He expects to begin operations at once.

The schooner Wesley M. Oler, from Dennis, Mass., was loading with lumber last week at Fernandina, Fla. She will take out a cargo containing 150,000 feet, being loaded by Harold Weston & Co.

At Green Cove Springs, Fla., the saw-mill plant of O. A. Buddington is running on full time. A shipment of 45,000 feet of cypress lumber was made on the 3d inst. to the Michigan Lumber & Manufacturing Co., at Jacksonville, Fla.

The directors of the Mechanics, Dealers and Lumbermen's Exchange, of New Orleans, at a meeting last week endorsed the Edison Electric Co.'s project for the erection of a building adjoining the Exchange.

It is reported that ground has been staked off and preparations made for the erection of another sash and door factory on the bank of Elk river, opposite Charleston, W. Va. A large building will be erected at once.

The plant of the C. S. Burt Co., at Friars Point, Miss., has been purchased by the Delta Veneer & Box Co. The cottonwood mill at that point is doing good work, and the company has a number of large contracts from the sugar mills.

The basket works of Portsmouth, Va.,

have shut down indefinitely, and, owing to the shortage in the truck crops, the barrel factories of that vicinity have large stocks on hand and have reduced their working forces to a minimum.

The British steamship Titania, which went to sea lately from Horn Island, Miss., drawing twenty feet seven inches, took a cargo of sawn timber consisting of 2,430,000 superficial feet, furnished by Hunter, Benn & Co., of Pascagoula, Miss.

Articles of incorporation were filed last week in Kansas City, Mo., by the Alexander-Hall Lumber Co. The capital stock is \$10,000, and the incorporators are C. M. Hall, A. V. Alexander, B. M. Alexander, W. E. Hall and John A. Eaton.

Messrs. Loeck & Co. broke ground at Dobbin, W. Va., on the 3d inst. for a large handle factory, to be completed in ninety days. The plant will employ 200 men. A large area of hardwood timber has been purchased to furnish material for the plant.

During the month of April last the importation of lumber from Canada amounted to 57,074,000 feet, against 50,433,000 feet for the same month last year. The imports for the ten months ending April 30 were 609,392,000 feet in 1895, against 426,720,000 feet in 1895.

It is stated that the A. Gilmer Mills, at Orange, Texas, will add a number of improvements in the early fall. Among the prominent additions are mentioned two band saws and a carrier to convey the lumber and assort it as it passes out. All contracts have been concluded for the work.

Mr. N. Emanuel, a large cross-tie exporter of Brunswick, Ga., has adopted a new method of shipping ties by bringing barges in tow from New York for that purpose. The barge Forest Belle arrived at Brunswick on the 2d inst., and will clear for New York with a cargo of 30,000 cross-ties.

The receipts of lumber at the port of New Orleans for the week ending the 2d inst. were 1,548,000 feet, and for the season 82,310,128 feet, against 70,004,490 feet for the corresponding period in 1894-95. Receipts of shingles were 40,000, laths 150,000, oak staves 104,424 and cypress staves 36,000.

Richard Jones, of Mobile, Ala., special master in the case of the Southern States Land & Timber Co., the great English corporation of Pensacola, which was placed in the hands of receivers last year, gives notice that he is ordered by the United States Court to ascertain and report by July 15 the names of all creditors and the amount due to each, and what property is covered by the deed of trust executed by the company May 17, 1889.

It is stated that the mills of Beaumont, Texas, have orders booked for export amounting to over 13,000,000 feet. Of this amount the Consolidated Export Lumber Co. has 10,000,000 feet and the Reliance Lumber Co. 3,000,000 feet. These shipments go to South Africa, Europe, South America, the West Indies and Mexico. In addition to this volume of business, the Reliance Lumber Co., during the week ending the 3d inst., refused to accept an offer of 300,000 ties, which amounts to 9,600,000 feet, this also being an export order.

It is stated that the recent reports sent abroad of the failure of the Woodworth Lumber Co., at Monroe, La., were erroneous. Its liabilities will amount to only \$60,000, and its assets \$120,000, consisting principally of timber and lumber. Of the latter it has 6,000,000 feet on the yard ready for shipment, but as there is no de-

mand for it, it has asked the court to appoint a receiver. It is also stated that Mr. Woodworth, the president, will have entire control of the affairs of the company, and will continue the business without the aid of a receiver.

The stockholders of the Arkansas & Missouri Yellow Pine Lumber Co. met at Little Rock last week and decided to surrender the company's charter and dissolve. The reason assigned for the dissolution was overproduction and the demoralization in prices. Prominent among the stockholders present at the meeting were A. J. Niemeyer, St. Louis; Oscar Rowley, Sayre; J. W. Ammerman, B. W. Smith, Texarkana; Louis Werner, St. Louis; P. G. Gates, Eagle Mills; R. W. Hine, F. R. Pierce, Arkadelphia; J. A. Freeman, Millville; George W. Schwartz, St. Louis; T. F. Doyle, Shendon; W. R. Abbot, Fort Smith; W. S. King, Van Buren, and W. H. Mitchell, Little Bay.

The lumber industry at the port of Fernandina during the month of June closed with a satisfactory volume of business. A steady growth of this industry in nearly every avenue is now assured, and at all milling centres adjacent to the city mills are well supplied with orders. During the month of June 5,248,000 feet of lumber was shipped, distributed as follows: New York, 1,470,000 feet; Boston, 820,000 feet; Philadelphia, 734,000 feet; Baltimore, 335,000 feet; Fall River, 407,000 feet; Portland, 303,000 feet; Pawtucket, 240,000 feet, and Perth Amboy, 520,000 feet. The foreign shipments for the month were 419,000 feet. The total shipments of cross-ties were 12,000. The prospective shipments of lumber for July will be as follows: Yellow Pine Co., 30,000 ties; George F. Drew and Drew Lumber Co., 1,500,000 feet; Thos. A. Ganse, for Harold Weston and others, 3,800,000 feet; Cooney, Eckstein & Co., 1,000,000 feet; total for month 6,300,000 feet, and total cross-ties 30,000.

Superficial Examination of Ores Free

The Manufacturers' Record, seeking to turn attention to the mineral resources of the South and to aid its readers in the intelligent investigation as to what may or may not be of value, has arranged with Mr. Charles Catlett, chemist and geologist, of Staunton, Va., to make superficial examinations of samples without charge. Such samples will be reported in the Manufacturers' Record, with a word of explanation as to probable or possible value.

The following directions should be observed:

Samples should be sent to Charles Catlett, No. 10 New Court House street, Staunton, Va., with all mail or express charges prepaid.

The name and address of sender should be clearly stated on package.

Care should be taken to select an average sample, otherwise the examination will prove of no value. Quite a small quantity will be sufficient.

A postal card or letter to Mr. Catlett, with a word of explanation as to mode and exact location of occurrence, would assist in giving value to the examination.

Lola Cornelius, Statesville, N. C.: Quartz carrying pyrites.

A. Gotloff, Red Oak, Ky.: No. 1. Slate. Would make a buff brick. No. 2. Slate. Would make a buff brick.

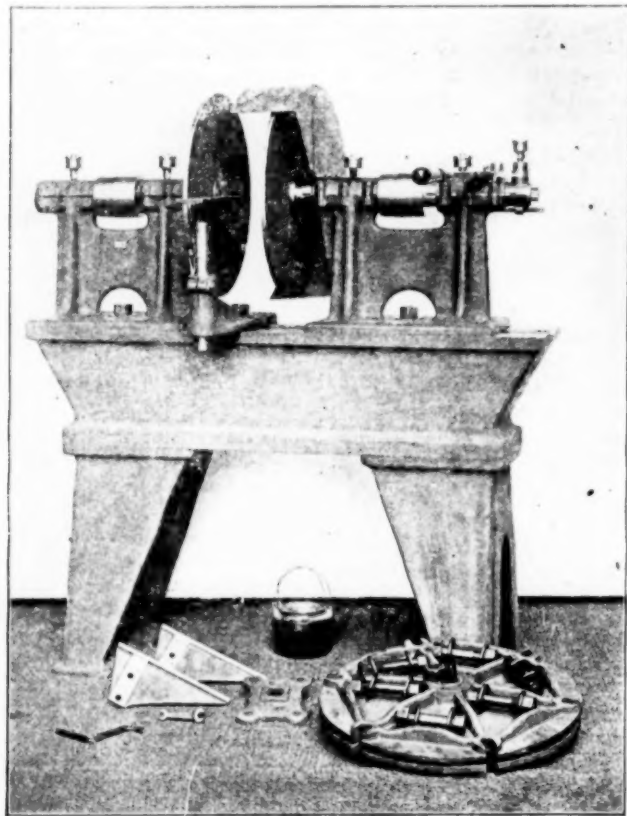
J. C. Furguson, Watts, S. C.: No. 1. Iron ore and quartz. No. 2. Iron ore and quartz. No. 3. Decomposing feldspathic rock.

W. E. Spruce, Knoxville, Tenn.: No. 1. Red hematite. Good quality. No. 2. Lean copper ore. May carry gold. No. 3. Micaceous rock, with scales of graphite. No value. No. 4. Quartz carrying free gold. Valuable if in quantity. No. 5. Quartz carrying pyrites. No. 6. Crystals, brown hematite after pyrite.

MECHANICAL.**Gardner Improved Grinder.**

The Gardner grinder is now being made with the two discs close together and parallel with each other. This new

ting in a new Lidgerwood carriage and the Miller patent full-rope carriers. The original contractors for the cableway used a Lidgerwood engine, hence the plant as it stands today is practically the same as the ordinary Lidgerwood cableway. The head tower is 125 feet high; the load car-



THE GARDNER IMPROVED GRINDER.

form of the Gardner grinder is illustrated herewith. It is adapted to grinding two faces which are opposite and parallel to each other, such as square-headed screws, washers, spanner wrenches, etc. The work to be ground is placed between the disc wheels, one of which is movable, and is held on a rest which is between the wheels. The movable wheel is then brought up, grinding the side next to it, and also pressing the piece to be ground against the other wheel, which grinds the opposite face. The disc wheels are made from steel and are ground flat. Work can be ground true on this grinder to the ten-thousandth part of an inch. The cutting faces of the wheels are emery paper or cloth, which are glued on the steel discs and securely held in place by the spiral grooves on each face of the disc. Cutting surface of the emery cloth sinks into the spiral groove, thus forming a clearance for the particles of emery and iron to fall in, so that these particles do not roll between the cutting face and the work and prevent the wheel from cutting.

This feature makes the Gardner grinder a fast cutter, and it is claimed that it will do from two to ten times the work of a solid wheel in the same time. With the parallel discs as many as 800 square-head set-screws can be ground in an hour, grinding the four sides of each head and making the opposite sides parallel. Charles H. Besly & Co., 10 North Canal street, Chicago, Ill., are introducing this grinder.

The Longest Span Cableway.

The longest span cableway in the world is that put in something over a year ago for the construction of the Holyoke dam, Holyoke, Mass. It has a length of 1650 feet. The longest span cableway previously erected was one of 1505 feet at Point Pleasant, W. Va. The Holyoke cableway has recently been remodelled by the Lidgerwood Manufacturing Co., put-

ried, six tons. The contractors for the dam, Messrs. Fruin & Bambrick Construction Co., and H. S. Hopkins have expressed themselves as entirely satisfied with the cableway as remodelled by the Lidgerwood Manufacturing Co.

Pittsburg Belt Punch.

The usefulness of an accurate belt punch makes such a tool a desirable one for the tool-chest of the mechanic. Illustrated herewith is the Pittsburg belt punch, a patented device which makes a hole in a belt from one-eighth to three-eighths of an inch in diameter.

Holes can be made uniform in size and



FIG. 1.



FIG. 2.

with smooth, clean-cut edges, without taking belts off the pulleys. It is designed to displace the common belt punch, with which a hammer must be used. Belts can be punched and laced when, it is stated, the old-style punch cannot be used.

One end (Fig. 1) is used for cutting holes. Fig. 2 shows the other end of the

The punch and awl are made of one piece of best cutlery steel, finely tempered and handsomely finished. This punch can be sharpened when dull, and is practically indestructible. The handle is made of corrugated brass tubing, fits the punch and awl and affords a firm grip. With this tool one man can punch and lace any-sized belt without assistance.

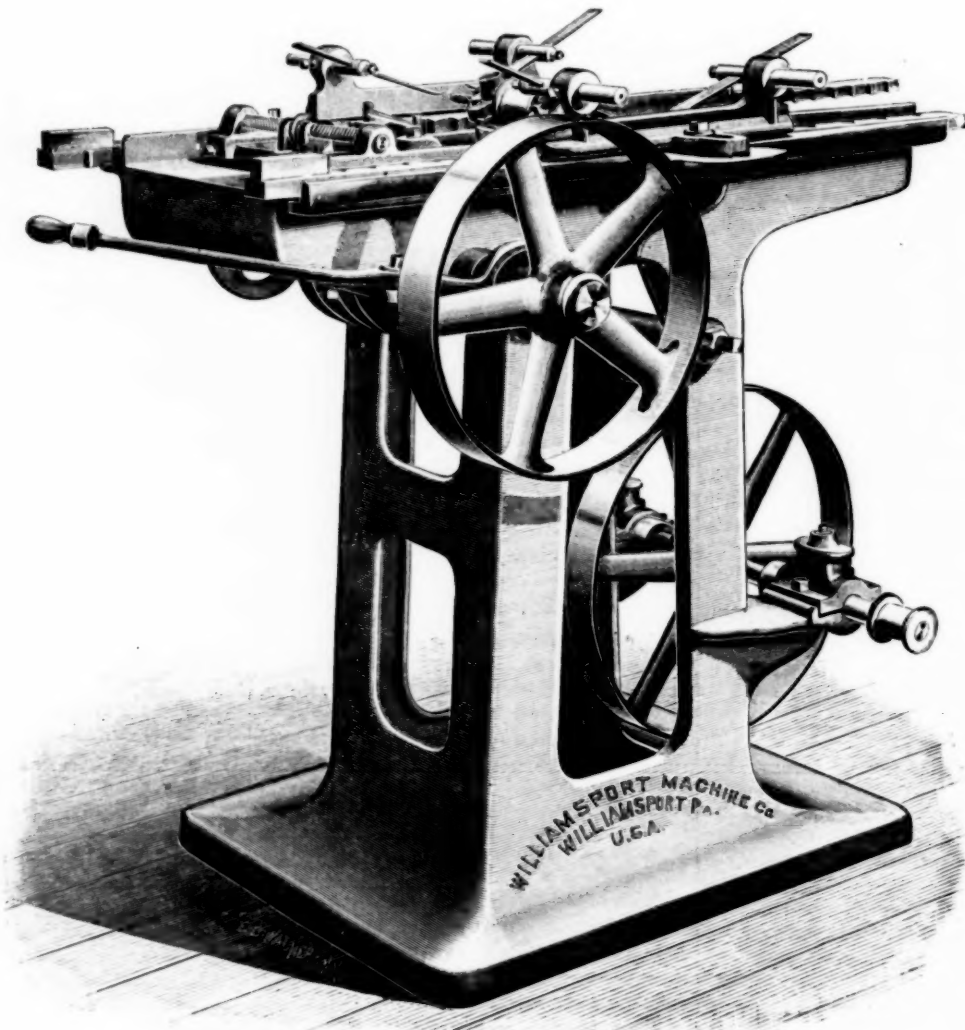
This punch is made by the Pittsburg Gauge Co., Pittsburg, Pa.

New Blind Stile Borer.

The machine illustrated herewith is intended for boring stiles for pivot slats exclusively. The work is done by two horizontal bits capable of boring 9000 holes per hour. No laying out or marking is required, and the work is always in plain view of the operator. The spacing and depth of boring can be regulated as required, and the work is well done. The pulls that do the spacing are adjusted by the right and left hand-screw, as shown in the cut. By the use of spring pressure all holes are bored the same distance from the face of stile, regardless of the thickness of the stock being worked. The Williamsport Machine Co., Williamsport, Pa., is the manufacturer.

The Galveston Wharf Co. has completed the improvements to its elevator, and grain is now being received for export. Orthwein & Co., of St. Louis, one of the largest exporting firms in the country, has begun shipping wheat to Galveston for shipment. The elevator has a storage capacity of 1,000,000 bushels.

The Manufacturers' Record has received the initial number of the Financial



NEW BLIND STILE BORER.

tool inserted in the same handle. This end is a slotted awl to be used for enlarging the holes and for lacing. The awl is inserted in the hole, and the lace being laid in the slot, the awl is then withdrawn, bringing the lace through.

and Commercial World, which is announced as a semi-monthly paper to be devoted to the financial and commercial interests of the country. The publication is printed on heavy paper and presents a neat appearance typographically.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

The Gas Engine & Power Co., Morris Heights, New York city, have plans and specifications for a new two-story machine shop, 250x76 feet, to be constructed of steel.

ALABAMA.

Anniston—Grist Mill, etc.—The Anniston Mercantile Co. has bought the mill of the Trap-Tyler Co. and will operate it, manufacturing meal, grits, etc.

Athens—Water Works.—The city has had surveys made of proposed water works, and the cost is estimated at \$14,000. The legislature will probably be petitioned for authority to issue bonds. Address the mayor.

Birmingham—Chewing-gum Factory.—The Gilbert Manufacturing Co. is about to commence the manufacture of chewing gum.

Birmingham—Powder Mill.—Malone & Bell have closed negotiations for the establishment of a powder mill by the Chattanooga Powder Co., now of Chattanooga, at a cost of \$250,000.

Florence—Water Works.—The city has made a proposition to the Florence Water Co. for the purchase of its plant. Address the mayor.

Greenville—Cotton Mill.—R. Y. Porter and associates are organizing a cotton-mill company to build \$100,000 plant.

Jacksonville—Iron Mines.—The construction of the Tredegar Mineral Railway is progressing rapidly, and in the near future developments of the iron-ore deposits owned by the Tredegar Mineral Railway & Iron Co. will probably be commenced; J. W. Burke, manager.

Selma—Machine Works.—The Cotton States Machinery Co. has been organized, with A. W. Cawthon, president; C. Young, general manager, and O. M. Cawthon, secretary, to manufacture the young cottonseed crusher, cotton gin, cleaner, etc.

ARKANSAS.

Dardanelle—Oil Mill.—The Arkansas Valley Cotton Oil Co. is building a 30-ton cottonseed-oil mill.

Eldorado—Water Works.—The city contemplates the construction of water works. Address the mayor.

Fayetteville—Cold-storage Plant.—A company is being organized to erect a cold-storage plant.

Harrison—Ice Plant.—W. H. Fellows will establish an ice factory.

Osceola—Ice and Electric-light Plant.—The Electrical Engineering & Supply Co., of 293 Second street, Memphis, Tenn., is constructing an electric-light plant and an ice plant at Osceola.

FLORIDA.

Linton—Fertilizer Factory.—George J. Scammell will establish a fertilizer factory.

Miami—Souvenir Factory.—The Florida Souvenir Co. has been incorporated, with capital stock of \$5000, to manufacture souvenirs, etc. Frank E. Heath, of New York; Walter S. Graham, of Miami; George M. Robinson, of Titusville, and Testher Birdsall, of New York, are the incorporators.

Tampa—Soap Factory.—The Tampa Soap Factory will double its capacity.

Tampa—Land Improvements.—John B. Walton and associates will develop a new suburb, to be called Campobello.

Titusville—Extract Factory.—J. Y. Miller has bought the machinery for equipping his extract factory at Titusville.

GEORGIA.

Americus—Electric-light Plant.—The city council continues to discuss the erection of an electric-light plant. Address the mayor.

Augusta—Cigar Factory.—Danforth & Willard will establish a cigar factory.

Cordele—Hotel Company.—The Union Hotel Co. has been incorporated, with a capital stock of \$6000, for operation of hotel, etc.; incorporators, J. Q. Adams and others.

Savannah—Lampblack Factory.—C. E. Broughton, John F. Freeman and E. G. King have incorporated the Southern Lampblack Works, with capital stock of \$10,000; plant will be established at once.

Union Point—Brick Works.—S. H. Sibley and J. H. Carlton have established a brick plant.

Union Point—Knitting Mill.—The Athens Knitting Mill has been removed to Union Point and is in operation, with thirty hands.

Valdosta—Electric-light Plant.—The Valdosta Electric Light Co. has been reorganized, and will increase the size of its plant, putting in new machinery, etc.; S. W. Bentley, manager; capital stock \$20,000.

Valdosta—Lumber Mill.—The W. S. Fender Lumber Co. has been formed by W. S. Fender and J. H. Sims, and bought the Moore lumber mill for \$29,000. Operations will be resumed.

KENTUCKY.

Catlettsburg—Water Works.—The Catlettsburg, Kenova & Ceredo Water Co. contemplates extending its mains to several nearby towns.

Frankfort—Cigar Factory.—A. F. Respass, of Maysville, will establish a cigar factory in Frankfort.

McHenry—Coal Mines.—The McHenry Coal Co. is preparing to put in an electric plant for operating its mining machinery and for haulage purposes.

Paducah—Sewer System.—The city has in contemplation the construction of a sewer system. Address the mayor.

Paducah—Flour Mill.—The Paducah Grain Co. has been organized, leased the Allard mill, will overhaul and operate same; mill's daily capacity is 175 barrels; W. A. Coker, superintendent, and P. V. Trovillion, secretary. The company expects to erect a grain elevator in the near future.

Thompskinsville—Flour Mill.—M. Duke & Son will build a 40-barrel flour mill.

LOUISIANA.

Amite City—Electric-light Plant.—A movement is afoot for the establishment of an electric-light plant. J. L. Harris, J. A. Cathran and others are interested.

Amite City—Ice Plant.—There is a movement afoot for the erection of an ice plant. The Business League can give information.

Crowley—Rice Mill.—It is proposed to erect a rice mill of 500 barrels capacity, to cost \$30,000. A. Kaplan is interested, and is endeavoring to interest New Orleans capitalists.

Franklin—Water Works.—The city has voted \$20,000 in bonds for the construction of water works. Address the mayor.

New Orleans—Rice Mill.—The National Rice Milling Co. is expending about \$40,000 in additions and improvements to its New Orleans mill A; have put in new engines to develop 900 horse-power, boilers, milling machinery, etc., doubling the plant's capacity, making it 20,000 bushels daily.

New Orleans—Water Company.—The Water Manufacturing Co. has been incorporated, with a capital stock of \$50,000, to manufacture and distill water; John S. Anderson, manager; L. R. McCarthy, vice-president, and Louis S. Jacob, secretary.

Shreveport—Bridges.—H. C. Lindsey has contracts for construction of two bridges for the K. C., S. & G. R. R.

MARYLAND.

Annapolis—Glass Works.—Arrangements for resuming operations at the Eastport glass works are still under way. For information address John J. Kelly, 737 Cross street, Baltimore.

Baltimore—Cotton Mill.—The Clipper Cotton Mills, at Woodberry, are adding new machinery.

Baltimore—Drug Company.—Harry T. Thomas and others have incorporated the Calvert Drug Co., with a capital stock of \$5000.

Baltimore—Dry-kilns.—The Emerson Co., of Baltimore, has received contract to erect a compression dry-kiln of 10,000 feet daily capacity for Landon, Kent & Co.

Baltimore—Telephone System.—The Home Telephone Co. (W. J. Atkinson, manager, North and Fayette streets,) is now preparing to contract for the construction of its system in accordance with the ordinance granted by the city council.

Baltimore—Mines.—The Big Union Mining Co. has been organized and incorporated, with headquarters in Baltimore, its purpose being to develop mines in the West. R. E. Lyon, of 15 West Franklin street; H. D. Tilden and C. G. Scheuerman, of Baltimore; B. L. Duke, W. T. O'Brien and L. D. Hearitt, of Durham, N. C., and Stephens H. Emmens are interested. The company has offices in the Equitable Building, Baltimore.

Krug—Stave Mill.—A. Knabb & Co. are erecting an additional stave mill of 25,000 daily capacity.

Mountain Lake Park—Water Works.—The Mountain Lake Park Association has completed plans and surveys for the works previously noted; will arrange for construction in the near future; supply is to be obtained from springs.

Rising Sun—Electric-light Plant.—Coates & Fox contemplate erecting an electric-light plant.

Rising Sun—Lumber Mills.—A. L. Duyck-luck & Co. will erect a planing mill.*

MISSISSIPPI.

Brookhaven—Ice Factory.—W. H. Seavey is said to be interested in the erection of an ice factory.

Meridian—Cotton Mill.—The Co-operative Cotton Mills expects to enlarge in the next six months.

Summit—Ginnery.—The Summit Cottonseed Oil Co. will erect a ginnery.

Wesson—Grist Mill and Gin.—A company has contracted for the erection of a plant for ginning cotton, grinding corn and bolting meal.

MISSOURI.

Kansas City—Realty.—The Kaw Valley Realty Co. has been incorporated, with capital stock of \$50,000, by S. J. Fitzhugh and others.

Kansas City—Lumber Company.—C. M. Hall and others have incorporated the Alexander-Hall Lumber Co., with a capital stock of \$10,000.

Kansas City—Telephone Franchise.—D. A. Williams and associates have applied for franchise for telephone system. They are said to represent the Standard Telephone Co., of Wisconsin.

Louisiana—Electric-light Plant.—The city may possibly arrange for owning its own plant when present contract expires this fall. Address the mayor.

Monett—Ice Plant.—The Monett Electric Light, Power & Ice Co. is erecting an ice factory.

St. Louis—Stove Company.—The Charter Oak Stove & Range Co. has been incorporated by George D. Danna and others with capital stock of \$50,000.

Westport—Water Works.—The city has voted \$75,000 in bonds for the proposed water works. Address the mayor.

NORTH CAROLINA.

Charlotte—Gold Mines.—The Philadelphia Mining Co. is erecting a stamp mill at its mines near Charlotte. A 10-foot vein is being developed.

Newton—Flour Mill.—J. H. McLeland intends to remodel his flour mill to the roller process.

Salisbury—Sash and Blind Factory.—P. H. Thompson will rebuild his burned sash and blind factory.*

SOUTH CAROLINA.

Anderson—Fire Company.—The Anderson Hook & Ladder Co. has been organized, with H. H. Russell, secretary.

Clover—Cotton Mill.—The Clover Manufacturing Co. is said to contemplate enlargements.

Gaffney City—Cotton Mill.—Commission for charter has been issued to the W. D. Wheat Co., the incorporators being W. D. Wheat, J. A. Carroll, J. G. Wardlaw, all of Gaffney City, and J. P. Wilson, of Charlotte, N. C. This is doubtless the 10,000-spindle mill which was noted several weeks ago as to be built by H. D. Wheat and associates.

Georgetown—Electric-light Plant.—The city has accepted the proposition of E. E. Mandeville, of Racine, Wis., for lighting the streets, and plant will be built at once.

Spartanburg—Cotton Mill.—The Arkwright Mills, recently fully reported, has been granted its charter; 10,000-spindle mill is being built.

TENNESSEE.

Athens—Typewriter Factory.—The Fisher Typewriter Co., recently noted as negotiating for removal to Knoxville and other locations, will probably remain in Athens for the present.

Chattanooga—Cotton-press Works.—Henry Copeland expects to make improvements to his plant, put in boiler and engine, etc., in the fall.

Chattanooga—Electric-light Plant.—The Chattanooga Electric Light & Power Co. has received the plans and specifications of its proposed plant. Bids for erecting the new building will be wanted at once; main building 85x107 feet, of brick.

Crossville—Coal Mines.—The Niedererhouse Co., C. O. Godfrey, president, is opening coal mines.

Greenville—Water Works.—The Greenville Water Co. will arrange for adding 100 tons of pipe, etc.

Knoxville—Electric Plant.—The Citizens' Electric Railway Co. will add another engine to its plant after August 15.

Knoxville—Tinware Factory.—Hill, Lloyd & Co. will establish a tinware factory. Machinery has been ordered, including dynamo for operating same.

McMinnville—Water Works.—The city is making investigations as to establishing water works; W. S. Lively, chairman of committee.*

Memphis—Electric-light Plant.—The Electrical Engineering & Supply Co. is installing an electric-light plant in the Peabody Hotel.

Memphis—Machine Works.—The W. T. Adams Machine Co., of Corinth, Miss., has purchased the plant of the Milburn Gin & Machine Co. at Memphis. The latter plant is said to have cost \$400,000 when first built. The Adams Company will remove its Corinth plant to Memphis and consolidate the two plants.

Nashville—Telephone Lines, etc.—The Southern Telephone Co., J. E. Thompson, manager, intends to construct a plant, as recently stated, providing underground conduits, etc.*

Watauga Valley—Flour Mill.—F. L. Milom will put in his flour mill the roller process.

TEXAS.

Cuero—Irrigation Plant.—Alexander Hamilton, V. Weldon, J. J. Summers, F. A. Taylor and Sam C. Lackey have incorporated the Cuero Power & Irrigation Co., with a capital stock of \$37,500, for the purpose of constructing irrigation system, etc.

Dallas—Mercantile.—V. H. Hexter and others have incorporated the Dallas Dry Goods Co., with capital stock of \$10,000.

Dallas—Mercantile.—The Huey & Philp Hardware Co. has been incorporated, with a capital stock of \$200,000, by J. Huey and others.

Denton—Flour Mill.—A company will erect a flour mill.

Fort Worth—Publishing Company.—E. G. Senter & Co., publishers, etc., have incorporated, with capital stock placed at \$10,000, by E. G. Senter and others.

Galveston—Wharves.—The Galveston Wharf Co. will rebuild its burned wharves; will fill up the water front, instead of erecting on piles, as heretofore.

Hillsboro—Ballast Factory.—Wisconsin parties contemplate establishing a ballast factory.

Laredo—Mercantile.—The Laredo Mercan-

the Co. has been incorporated by D. Hirsch and others, with capital stock of \$75,000.

Luling Coal Deposits.—W. P. Dunlap is said to have found coal deposits on his property. Developments will probably follow.

Nacogdoches Water Works.—The Nacogdoches Water Works Co. has been organized for the purpose of constructing a water supply system; W. F. Perkins, president; Geo. H. Davidson, treasurer, and I. L. Sturdevant, secretary.

Palestine Water Works.—The Palestine Water Co. intends to extend its mains, filters and other improvements.

Pecos Sulphur Mines.—It is reported that the United States Sulphur & Chemical Co. has been incorporated, with capital stock of \$500,000, for the purpose of developing on an extensive scale the sulphur deposits, covering an area of 500 acres, and located about forty miles northwest of Pecos City. It is said that R. E. Kyle, of Gadsden, Ala., is president of the company, and S. E. Baumhahn its agent in New York city.

Rogers Water Works.—A system of artesian well supply will probably be installed. Address the mayor.

Terrell Oil Mill.—The Terrell Cotton Oil Co. has been incorporated, with a capital stock of \$50,000, to erect and operate oil mills, etc. The incorporators are P. J. Manning, of Terrell; J. B. Wilson and E. J. Cannon, of Dallas.

VIRGINIA.

Front Royal Water Works.—The Front Royal Water Co. will lay 10,000 feet of four-inch mains; also 5500 feet of one and two-inch mains.

Good's Mill.—Flour Mill.—Mr. Good will erect a 25-barrel flour mill.*

Lynchburg Plow Works.—The proposed plow works recently noted are now assured, the \$25,000 necessary having been subscribed; H. P. Woodson, secretary. Industrial Association can give information.

Norfolk Icehouse.—The Norfolk Ice & Coal Co. will rebuild its burned icehouse.

Norfolk Land Improvement, etc.—The Southern Farm Land Co. has been chartered, with capital stock of \$50,000, to deal in and improve lands, etc.; George L. Rhodes, of Portsmouth, Va., president; A. B. Farnsworth, of New York, vice-president, and W. W. Foltz, secretary-treasurer.

Ottobine Flour Mill.—Abie Paul will build a 25-barrel flour mill.*

Richmond Hardware Company.—The Watkins Hardware Co. has been incorporated, with capital stock of \$50,000, by W. L. Robertson and others.

Roanoke Elevator Works.—The Elevator Equipment Co. has been incorporated, with capital stock of \$10,000, to construct and repair passenger elevators, etc.; Charles Adamson, of Cedar town, Ga., president; Russell Hawkins, of Philadelphia, Pa., vice-president, and Charles S. Dole, secretary.

Rosodyn Water-power Company.—The Potomac River Power Co. has opened subscription books at the office of Mackall & Hall, who may be addressed for information.

WEST VIRGINIA.

Bayard Bridge.—The Grant county commissioners have decided to construct a truss iron bridge at Bayard. Address them at Petersburg.

Charleston Sash and Door Factory.—A sash and door factory will be erected. Site has been chosen, but names of parties interested have not yet been made public.

Clendennin Dry-kilns.—The Emerson Co., of Baltimore, has been awarded contract for the erection of a dry-kiln plant for W. S. Lewis.

Dobbin Handle Factory.—Leech & Co. will build a handle factory, to employ 200 men.

Fairmont Glass Works.—The Johns Glass Works has ceased operations and will resume September 1. In the meantime making extensive improvements and repairs.

Huntersville Electric Plant.—The Pocahontas Electric Co. has been incorporated by James S. Laing, Freeman C. Bartlett and Harry Hirschfeld, of New York; Arthur L. McKaye, of Brooklyn, and Drury W. Cooper, of Elizabeth, N. J., for the purpose of erecting plants for supplying electric light and power. The capital stock is \$200,000.

Ravenswood Oil Wells.—W. J. Nelson, of Point Pleasant, has leased 2700 acres of oil land near Ravenswood, and will develop same.

BURNED.

Athens, Ga.—Parr Bros.' paint shop; loss \$3000.

Brewton, Ala.—The Harold Mill Co.'s dry-kiln; loss \$5000.

Cordele, Ga.—P. S. Barber's saw mill; loss \$1500.

Durham, N. C.—The Durham Ice Co.'s plant; loss about \$10,000.

Keedysville, Md.—E. A. & A. C. Fry's packing factory; loss about \$5000.

Plaquemine, La.—The Edw. Gay Planting & Manufacturing Co.'s feed mill.

Savannah, Ga.—The laundry of the Hotel Tybee.

BUILDING NOTES.

Andrews, N. C.—Residence.—W. R. Walker has plans for his dwelling, prepared by Geo. F. Barber & Co., of Knoxville, Tenn.

Atlanta, Ga.—Dwellings, etc.—Building permits issued to Steve Ryan for \$6000 two-story building, and to W. L. Throver for \$1800 brick store.

Atlanta, Ga.—Mercantile Building.—J. C. Peck intends to erect an eight-story building, estimated to cost \$50,000; to contain about 120 rooms.

Atlanta, Ga.—Office Building.—The city council has granted permission to the Mutual Building Co. for the erection of an office building; to be twelve stories high, constructed of steel frame, fire-proof material, and cost about \$100,000. The plans have been completed by Bradford L. Gilbert. Building will have about 300 rooms, three elevators operated by electricity, equipped with heating system and electric lights throughout; R. F. Shelden, president of company, and A. H. Renning, manager.

Baltimore, Md.—Station.—The police commissioners of the city will receive bids until July 20 for the erection of the Southern Police Station building. Bond will be required. Drawings and specifications can be seen at office of Jackson C. Gott, Charles and Fayette streets; E. M. Schryver, president of police board.

Barnesville, Ga.—Depot.—The Central of Georgia Railroad will erect a depot as soon as plans and specifications are completed; S. C. Hoge, superintendent, Macon, Ga.

Cambridge, Md.—Residence.—Philip Goldsborough will build a residence after plans by George F. Barber & Co., of Knoxville, Tenn.

Charlotte, N. C.—Courthouse.—The following bids were received by Frank P. Milburn, architect, (of Winston, N. C.) for the erection of the new courthouse for Charlotte: H. P. Woodson, Lynchburg, Va., \$52,700; L. P. Hazen & Co., Cincinnati, Ohio, \$51,837; Gude & Walker, Atlanta, Ga., \$49,495; Knoxville Building & Construction Co., Knoxville, Tenn., \$45,100; J. H. McKinney, Augusta, S. C., \$47,480; G. W. Wearing, Columbia, S. C., \$48,374; W. W. McAfee, Atlanta, Ga., \$40,865. The contract was awarded to the last named.

Charlotte, N. C.—C. C. Hook will prepare plans for a dwelling for T. R. Robertson and one for George B. Hanna.

Chattanooga, Tenn.—Dwellings.—Building permits issued to C. D. Clark for \$6000 house, and to A. Mitchell for \$2500 frame house.

Chattanooga, Tenn.—Auditorium.—Breeding & Son's plans have been accepted for the proposed auditorium. These plans contemplate a \$10,000 structure, 90x155 feet, an ellipse in shape, to seat 4800. The city is to build it. Address the city council auditorium committee.

Clearwater Harbor, Fla.—Hotel.—It is reported that the Plant system will build a 400-room hotel, to be lighted by electricity, etc.; Henry B. Plant, president of company, New York city.

Corinth, Miss.—George F. Barber & Co., of Knoxville, Tenn., have prepared plans for a dwelling for Paul T. Jones.

Dallas, Texas.—Warehouse.—The Texas-Moline Plow Co. is considering the erection of a five-story warehouse and office building.

Fort Myer, Va.—Stewards' Quarters.—Sealed proposals will be received until August 4 for construction of hospital stewards' quarters; also plumbing and gas fitting (piping). Address Major C. F. Humphrey, Depot Q. M., Washington, D. C.

Fulton, Ky.—Hotel.—Henry Knight writes that he will build a hotel, as recently stated; cost about \$15,000; plans ready July 18; bids wanted.

Galveston, Texas.—Warehouse.—Bids will be received until July 15 for the construction of warehouse in accordance with plans and specifications now in the office of W. H. Tyndall, architect. Address John E. Baily, secretary.

Harper's Ferry, W. Va.—Church.—St. Peter's R. C. Church will erect a new structure, to cost about \$20,000, of brick and

stone; stained-glass windows, pipe organ, steam heating apparatus, etc.; Thomas J. Burleigh, chairman of committee.

Hazlehurst, Miss.—Dwelling.—George F. Barber & Co., of Knoxville, Tenn., have prepared plans for dwelling for R. P. Willing.

Helena, Ark.—Dwelling.—Geo. F. Barber & Co., of Knoxville, Tenn., have prepared plans for a dwelling for G. S. Ellis.

Huntingdon, Tenn.—Hotel.—S. J. Hendrick & Co.'s proposed hotel, noted last week, will cost \$10,000, and be three stories high, having iron front, plate glass, steam heat, 50x103 feet in size, etc.

Jacksonville, Fla.—School.—W. W. Thompson has completed plans for new school building.

Kansas City, Mo.—Synagogue.—The congregation Canas bir-Israel will build a \$10,000 synagogue.

Kansas City, Mo.—Dwelling.—Frederick E. Hill has prepared plans for a dwelling for Mrs. H. A. March, to cost \$50,000.

Knoxville, Tenn.—C. C. Sullins will contract for erection of building after plans by Baumann Bros.

Lebanon, Ky.—Dwelling.—J. A. Kelly will build residence after plans by George F. Barber & Co., of Knoxville, Tenn.

Little Rock, Ark.—City Hall.—The city hall will be improved at a cost of about \$3500. Address the mayor.

Little Rock, Ark.—Dwellings.—H. C. Jones has let contract to C. E. Suttle for two cottages. Plans have been prepared for a two-story business house for M. J. Donohue, B. B. Beavers, J. A. Richmond, A. Gashner, C. M. Butler and M. J. Michaels are erecting dwellings.

Lynchburg, Va.—Residence.—R. W. Massie will build frame building after plans by E. G. Frye.

Macon, Ga.—College.—The trustees have decided to expend \$15,000 on improvements to the Wesleyan College buildings; will put in passenger elevators.

Marlin, Texas.—Depot.—See "Waco."

Montvale Springs, Tenn.—Hotel.—The Montvale Hotel will probably be rebuilt.

New Orleans, La.—Dwelling.—Mrs. S. Kath will erect frame dwelling to cost \$5000.

New Orleans, La.—Dwellings.—Building permits issued to Mrs. L. Rocco for \$5000 frame building, to Mrs. F. C. Rensch for \$1750 cottage, and to Isidore Keiffer for \$5200 dwelling.

New Orleans, La.—Dwellings.—Building permits issued to William Stinson for \$1250 cottage, to W. H. Douglas for \$1500 cottage, to James A. Brennan for \$5000 cottage, to Mrs. Pritchard for \$2280 cottage, to W. A. Warrior for \$3400 cottage, and to Mutual Benevolent Association for \$3100 cottage.

Orangeburg, S. C.—N. A. Bull will build residence after plans by George F. Barber & Co., of Knoxville, Tenn.

Perry, Ga.—Residence.—R. L. Carter will erect residence after plans by George F. Barber & Co., of Knoxville, Tenn.

Piedmont, W. Va.—Residence.—George F. Barber & Co., of Knoxville, Tenn., have prepared plans for residence for Charles A. Suter.

Port Lavaca, Texas.—Church.—The Methodists will build a new church. Address Rev. W. J. Johnson, pastor.

Raleigh, N. C.—Hall, etc.—The North Carolina Agricultural and Mechanical College will erect an additional building for laboratory and lecture hall; also greenhouse attached; three stories high, 50x150 feet; A. G. Haladay, president.

Rapidan, Va.—Dwelling.—T. J. Peyton will build residence after plans by George F. Barber & Co., of Knoxville, Tenn.

Reisterstown, Md.—Dwelling.—George F. Barber & Co., of Knoxville, Tenn., have prepared plans for a dwelling for Dr. W. F. Godwin.

Sistersville, W. Va.—Church.—The Presbyterians will build a new church; to be about 40x60 feet in size, seating 300 people, constructed of pressed brick, etc.; to have pipe organ, boiler or furnace heat, etc. A. C. Jackson, of the committee in charge, can be addressed.

Tallahassee, Fla.—Depot.—The Florida Central & Peninsular Railroad denies the report mentioned last week that it will build a depot at Tallahassee, but enlarging and improving the present building is contemplated; D. E. Maxwell, general manager, Jacksonville, Fla.

Tampa, Fla.—Opera-house.—It is said that an opera-house will be built. Chas. Wright is probably interested.

Thomason, Ga.—Jail.—Contract has been let at \$4961 to Manly Manufacturing Co., of Dalton, Ga., for erection of city jail.

Waco, Texas.—Depots.—Alfred Abeel, re-

ceiver of the Waco & Northwestern Railroad, has applied to the court for permission to erect new depots at Waco and Marlin.

Washington, D. C.—Dwellings.—Frederick B. Pyle has completed plans for a colonial residence, 22x68 feet, to have cold storage, laundry, heating rooms, etc. D. M. Lea has let contract to Melton & Watts for five three-story brick dwellings. Permit has been issued for the erection of the hall of history of the American University, for which Jas. L. Parsons has contract at \$158,500. B. H. Warner will build eight or more dwellings, to have furnace heat, etc. A. Goenner has prepared plans for a residence for A. Oehmann, to cost \$5000 and have hot-water heat, electric bells, lights, etc.

Westport, Mo.—City Hall.—The city will erect a municipal building to cost \$20,000. Address the mayor.

Wilmington, N. C.—Office Buildings.—It is said that the Atlantic Coast Line is considering plans for a \$20,000 addition to the general offices at Wilmington; H. Walters, president.

RAILROAD CONSTRUCTION.

Steam Railways.

Beaumont, Texas.—H. G. Lindsey has secured the contract for completing thirty miles of the Kansas City, Pittsburg & Gulf road from Beaumont to the Louisiana State line. This contract includes large bridges across the Neches and Sabine rivers. It is stated that considerable of the work will be sublet. He may be addressed, care of the Railroad Company, at Beaumont, Texas.

Beverly, W. Va.—The Tygart's Valley Railway Co. has been incorporated, with \$500,000 capital, to build a line from Beverly, on the West Virginia Central & Pittsburg, to Mingo, in Randolph county. J. M. Craig, of Beverly; S. Marshall Williams and Percy L. Williams, of Everett, Pa.; W. H. Dasher, E. D. Williams, of Moore, Tucker county, W. Va., are among the incorporators.

Cassville, Ark.—The Cassville & Western Company has completed its railroad line between Cassville and Exeter, five miles distant, and has purchased rolling stock. It is intended to extend the line from Cassville to Harrison, Ark., sixty-two miles distant. J. M. Bayless, at Cassville, is president; D. L. Mitchell, secretary, and J. M. Stull, chief engineer.

Dardanelle, Ark.—The Dardanelle & Russellville Railway Co. is preparing to lay three and one-half miles of new steel rails, and will add a locomotive to its rolling stock. Thomas Cox, at Dardanelle, may be addressed.*

Fort Smith, Ark.—The St. Louis, Siloam & Southern Company has filed a mortgage at Harrison, Ark., to the United States Mortgage & Trust Co., for \$8,000,000. It is understood that this mortgage covers the proposed issue of bonds to the same amount, which, it is reported, Northern and foreign capitalists will take, thus insuring the building of the road between St. Louis and Fort Smith. A. Merriweather is chief engineer, and H. D. Mackey, of Pomona, Mo., is president.

Jacksonville, Ala.—It is expected to complete the Tredegar Mineral Railway by September 1. Joseph W. Burke is president of the company.

Krug, Md.—It is reported that the narrow-gauge road in operation from Krug to a point near Oakland, Md., will be extended nine miles into Oakland and will be made a standard-gauge line. It is owned by A. Knabb & Co., of Krug.

Lansing, Tenn.—It is stated that a company has been formed to build a railroad from Lansing, on the Cincinnati Southern system, to Petros, Tenn., under the title of the Brushy Mountain Railway. The incorporators include W. B. Swaney, Robert B. Cooke, Thomas B. Cooke, of Chattanooga, and F. H. Bassey, of Lansing.

Little Rock, Ark.—The Arkansas Western Railroad Co. has been incorporated, with \$100,000 capital, to build a railroad and telegraph line from a point in Clay county on the St. Louis, Iron Mountain & Southern system to a point in Randolph county forty miles distant. S. A. D. Eaton is president of the company. [This is the same project as that in which Maxwell Coffin, of Little Rock, Ark., is interested. The company proposes to build from Hoxie to Pocahontas, the county seat of Randolph county, as already stated in the Manufacturers' Record.—Ed.]

Mobile, Ala.—It is stated that the Gulf City Construction Co., which has the general contract for building the Mobile, Jackson & Kansas City road from Mobile to Jackson, Miss., has completed its arrangements for beginning work within a few days. F. W. Merrill is general manager of the company.

Searight, Ala.—It is reported that the Mobile & Girard will be extended to some point on the Gulf coast, by the way of Brewton or Flomaton, Ala. The Mobile & Girard is controlled by the Central of Georgia Company, of which H. M. Comer, of Savannah, is president. The length of the extension to Mobile would be 160 miles. The present road extends from Columbus, Ga., to Searight, 122 miles.

Tallapoosa, Ga.—The business men of Tallapoosa are considering the idea of building a railroad line from Tallapoosa to connect with the Chattanooga, Rome & Columbus road. Negotiations have been entered into with J. E. James, of Chattanooga. Among those interested are S. S. Rambo, John H. Davis and N. C. Matthews, of Tallapoosa.

Electric Railways.

Atlanta, Ga.—It is reported that the Atlanta, Knoxville & Northern Company, which is successor of the Marietta & North Georgia, has appropriated \$500,000 in the reorganization plan of the road to build the proposed extension from Marietta into Atlanta, twenty-one miles. Henry K. McHarg, vice-president of the Manhattan Bank, New York; Thomas Carmichael, of Dent, Palmer & Co., London and New York, and H. A. V. Post, of Post & Pomeroy, bankers, New York, are among those interested.

Baltimore, Md.—The Edmondson Avenue, Catonsville & Ellicott City Railway Co. is considering the idea of extending its tracks in the southwestern suburbs. H. T. Douglas, Equitable Building, is president.

Belton, Texas.—The Belton Electric Company advises the Manufacturers' Record that it will probably extend its electric railway to Temple, eight miles distant.

Kansas City, Mo.—The electric railroad line which is being promoted by David B. Page and others, it is stated, will cost about \$50,000. R. R. Swope, a local capitalist, is also interested in the scheme.

Pine Bluff, Ark.—The citizens of Pine Bluff are considering the idea of purchasing the present street railway and reviving the project to turn it into an electric line.

Washington, D. C.—It is reported that the Capital Traction Co. has succeeded in selling \$200,000 worth of bonds, and that work on this road, which is intended to be extended to Congress Heights, will begin within thirty days. A. E. Randle is promoting the project.

Washington, D. C.—The Washington & Falls Church Electric Railway Co. has completed its trolley line to Ballston, in the suburbs. It is expected to complete the line to Fairfax Court House. Joseph E. Willard, of Fairfax, is among those interested.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Bark Mills.—J. W. Walker, Graybeal, N. C., wants to correspond with manufacturers of bark mills; wants prices.

Boilers and Engines.—The Toccoa Cotton Mills, Toccoa, Ga., wants boilers and engines.

Boxes.—The Gilbert Manufacturing Co., P. O. Box 575, Birmingham, Ala., wants to buy boxes for packing its product.

Bridge.—Contracts for the masonry and superstructure of a bridge over the Jackson river at Iron Gate, Va., will be awarded July 15. For specifications address J. E. Johnson, Jr., Longdale, Va.

Conveying Machinery.—The Fuller Engineering Co., Calvert, Texas, wants to correspond with makers of conveying machinery.

Cotton Mill.—The Terry Manufacturing Co., Terry, Miss., wants to buy cotton-mill machinery of the latest improved kinds.

Electric-light-plant Supplies.—The Manassas Electric Light & Power Co., Manassas, Va., wants to buy about 8000 feet of No. 40 wire.

Elevators.—Elevators will be wanted for

warehouse. Address Charles Pearson, 22 Pullen Building, Raleigh, N. C.

Fire-proofing.—Fire-proofing will be wanted for warehouse. Address Charles Pearson, 22 Pullen Building, Raleigh, N. C.

Flour Mill.—Abe Paul, Ottobine, Va., wants to contract for 25-barrel flour mill.

Flour Mill.—Mr. Good, Good's Mill, Va., is ready to contract for 25-barrel flour mill.

Foundry Equipment.—P. H. Thompson, Salisbury, N. C., wants estimates on foundry equipment, new or second-hand.

Hose.—See "Pump."

Iron Tubing.—C. M. Case, 1 Prospect street, New Britain, Conn., wants to buy iron tubing.

Machine Shop.—The Gas Engine & Power Co., Morris Heights, New York city, has plans and specifications for a new machine shop, two-story, 250x76 feet, to be constructed of steel.

Machine Shop and Woodworking Shop.—The Kentucky Military Institute, Louisville, Ky., will want next fall equipment for manual training school machine shop and wood-working shop. Address Col. C. W. Fowler, superintendent K. M. I., Lynden, Ky.

Metal Work.—Descriptions and prices of metal work will be wanted. Address Chas. Pearson, 22 Pullen Building, Raleigh, N. C.

Mining Machinery.—The Fuller Engineering Co., Calvert, Texas, wants to correspond with makers of coal-mining machinery, conveying machinery, etc.

Oil Mill.—The Fuller Engineering Co., Calvert, Texas, wants to correspond with makers of oil-mill machinery.

Paper Machinery.—Mackin & Co., Monterey, Mexico, want to correspond with makers of machinery for making paper from the maguez and palmetto plants; full particulars wanted.

Pulleys and Shafting.—Sibille Bros. & Co., of Sunset, La., want to buy wood pulleys and shafting.

Pumps.—The mayor of the city of Austin, Texas, will receive bids until July 14 for furnishing the material and connecting the two 4,000,000-gallon pumps to the spring supply. Plans and specifications can be obtained from John W. Maddox, superintendent.

Pump.—The Chatham Manufacturing Co., Elkin, N. C., wants a 500 to 700-gallon underwriters fire pump, with six outside hydrants and 600 feet of two-and-one-half-inch hose; second-hand will do.

Railway Equipment.—The Cameron & Barkley Co., Charleston, S. C., wants quotations on ten miles of 30 to 50-pound relay rails in good condition. State point of delivery and best terms.

Railway (Electric) Equipment.—Therrell & Co., Charleston, S. C., will in the near future be in the market for rolling stock and equipment; will also want bids from responsible contractors.

Rock Crusher.—The city of Shreveport, La., wants a rock crusher. Address R. N. McKellar, mayor.

Roofing.—P. H. Thompson, Salisbury, N. C., wants estimates on roofing and siding (steel).

Roofing.—The Toccoa Cotton Mills, Toccoa, Ga., wants paper for roofing and flooring.

Sailboat Equipment.—K. B. Harvey, Punta Gorda, Fla., wants to buy complete outfit for three-mast schooner above deck, such as sails, wire rigging, ropes, blocks, etc.; register 205 tons.

Shingle Mill.—Sibille Bros. & Co., Sunset, La., want to buy a shingle saw mill.

Telephone Equipment.—J. E. Thompson, manager, Nashville, Tenn., wants to buy the most improved telephones, switchboards, etc.; also wants to obtain prices on conduits for 3000 wires, etc.

Torpedo Boats.—The United States government will open bids September 18 for the construction of three 30-knot torpedo boats. Blank forms of proposals will be furnished on application. Address H. A. Herbert, Secretary of the Navy, Washington, D. C.

Water Motor.—The Attalla Herald, Attalla, Ala., will probably want a water motor.

Water-wheels.—McMinnville, Tenn., is ready to receive propositions for the construction of water works. Address W. S. Lively, chairman of committee.

Woodworking Machinery.—Boyd & Rogers, Waynesville, N. C., want to buy machinery for cutting and sawing veneers.

Woodworking Machinery.—P. H. Thompson, Salisbury, N. C., wants to buy complete equipment for making sash and blinds.

Woodworking Machinery.—A. L. Duyck-inck, Rising Sun, Md., may possibly want

engine, woodworking machinery, planers, saws, molders, etc.

Woodworking Machinery.—See "Shingle Mill."

Woodworking Shop.—See "Machine Shop, etc."

TRADE NOTES.

The Bethlehem Iron Co., of South Bethlehem, Pa., is now ready to roll plates from high-grade open-hearth steel on its new plate mill, the rolls of which are 126 inches in length. Its product in this line will consist of plates for all purposes, which includes ship plate, boiler plate, tank, stack, etc.

Users of high-grade belting in Atlanta, Ga., and vicinity will be brought into closer touch with a leading manufacturer of such goods by the location in that city of an office of Charles A. Schieren & Co., New York city. Mr. Charles W. Seltz, formerly of the New York State department of this concern, is in charge, and will furnish advice on the subject of selecting the best and most economical belting.

Mr. David Rhodes, of Fairplay, Adams county, Pa., has placed a contract with Sprout, Waldron & Co., Muncy, Pa., through their representative, Mr. U. C. Darby, for a complete 25 to 30-barrel mill. Talbott & Sons Co., Macon, Ga., recently purchased from the same firm a 20-inch mill for grinding olivace. A late order received by Sprout, Waldron & Co. was from the Joseph Dixon Crucible Co., Jersey City, N. J., for a 24-inch emery mill.

A new firm of railway brokers recently established at St. Louis, Mo., is a strong combination of experts and progressive business men. Its title is J. H. Taylor & Co., and its headquarters are in the Walworth Building. Mr. Taylor, of this firm, is a railroad man of large experience as a master mechanic, car-builder and general superintendent. His thorough knowledge of this industry is therefore available to patrons. Such an authority can often give advice and suggestion in the selection of railway equipment and material that will save large sums to inexperienced buyers. The members of this firm are also consulting and mechanical engineers.

The new factory which Tiffany & Co. are completing at Forest Hills, N. J., will be operated entirely by electricity, not a steam-driven machine being employed beyond the limits of the power-house. The present factory and force at 53 Prince street, New York, will be moved out as soon as the electrical apparatus is installed. The electrical plant will consist of two 125 horse-power, 250-volt General Electric dynamos, which will furnish current to more than twenty motors scattered through the building. This will be 300 feet long in front, and will have three wings, each 100 feet long, extending back of the main building. Of these motors, some will be attached directly to the machines and some will drive a number of machines by belts from a shaft.

Oilless bearings, as made by the North American Metaline Co., Long Island City, N. Y., show noteworthy results. The use of these bearings for bushings is designed to dispense with oil or other lubricants for loose pulleys. The material of which these bearings are made is a gun or composition metal bushing, in halves, with the bearing surface drilled and filled with plugs of Metaline—a patented composition metal, for which the chief claims are self-lubrication and great durability. A set of bushes made of Metaline and used in a prominent shop in Newark, N. J., were recently replaced after eight years of service on a loose pulley running 380 revolutions a minute, no oil or other lubricant having been used during that time. Aside from the saving of time and money and the immunity from care of pulleys on which metallized or oilless bushes are used, the relief from anxiety in connection with fire risk is a consideration of importance. No oil being used, the bushes are clean and can be run in places where the use of pulleys would otherwise be prohibited on account of oil splashing.

The adaptability of the Van Duzen gasoline engine for running machine shops and foundries is plainly demonstrated in a letter received a few days ago by the Van Duzen Gasoline Engine Co., Cincinnati, Ohio, from W. A. Fletcher, Clarksville, Mo. In this letter Mr. Fletcher says: "We feel it our duty to send you a testimonial of the merits your No. 10 gasoline engine has over steam, and which has been running our shop one year. Like all steam users we had our prejudices, but certain facts so stared us in the face we concluded to try one of your engines, and found it to be more than you repre-

sented, reducing our power expenses over one-half. After removing our steam plant—boiler, engine and coal bin—we had enough room to start another shop; not only saves space, but time and aggravation, as, when very busy, steam is up and down, enough to make a man glad when he's dead. But since we placed your engine we have not had one minute's trouble, and it gets no more attention than one of our lathes or planers. The varying of loads makes no difference at all, not even slowing up to shift belt on a No. 3 Sturtevant blower, two cupolas running 3000, a 'couple of extra chucks,' as our boys call it, is all there is to it. This may seem an exaggeration, but is being done almost every day. We could sit for hours and write the advantages it has over our old steam plant, and any who doubt these bold assertions we invite them to investigate and see for themselves our words are true."

TRADE LITERATURE.

Hunting is a failure unless you use a first-class gun, is a truth that the average sportsman is familiar with. A fine line of such goods is shown in a catalogue issued by W. B. Belknap & Co., Louisville, Ky. Many entirely new and distinct patterns, both in double and single-barrel guns, are shown. Outfits for hunters of attractive styles are also illustrated.

A circular describes the new universal sectional warp mill or reel made by the M. A. Furbush & Son Machine Co., 224 Market street, Philadelphia, Pa. This machine is designed to eliminate the dangers and possibilities of section streaks due to the uneven tension on the warp threads in reeling. It has been in use in a number of leading mills, and is warmly endorsed.

The perfection reached in the attainment of artistic effect with iron wire and metal work is reflected in a catalogue issued by the Columbia Iron Wire Works Co., Canton, Ohio. This publication shows some handsome examples of gate, fence, grille, stairway, fire-escape, bracket, illuminated door and tiling, awning, shutter, door, flower-stand, window-guard, elevator inclosure, bank and office railing, final cresting, ceilings and other work. This company is constantly executing new designs in this class of work, and enjoys unusual facilities for handling orders for architectural or special metal work.

The success of Buffalo disk wheels, applied for exhausting, ventilating and cooling, is leading to the general employment of this device. Many years of costly experiments and tests are represented by the perfect type of this wheel. The design of blades adopted delivers a remarkable volume of air. Smooth running, even at a high speed, is secured by an ingenious system of balancing. As near as possible the centre of gravity coincides with the centre of motion. Much skill and expense are necessary to perfect these machines, with the result that a high degree of accuracy is obtained. The Buffalo Forge Co., Buffalo, N. Y., the manufacturer, has issued an interesting descriptive pamphlet of these wheels.

The Penberthy Bulletin is an aggressive publication, giving hints of value to steam users and containing some useful mechanical suggestions. It is published monthly by the Penberthy Injector Co., Detroit, Mich., and shows what is being accomplished by the Penberthy injector. It notes that on May 12 100,000 of these injectors was the aggregate production to that date. The combined capacity of these injectors would equal over 50,000,000 gallons per hour. These figures apply only to the Detroit factory during the nine years of its existence. In addition to this, the company's Canada factory has put out about 25,000 injectors. New and improved machinery has been recently put in by this concern, and it now claims to be the largest manufacturer of injectors in the world.

A new discount sheet has been issued by the American Screw Co., Providence, R. I. Changes are made in the discounts on wood screws, coach screws, Bay State rivets and taps. Awards made for these goods at the World's Fair show their superior qualities. The character of these awards was as follows: Wood and machine screws—For most complete display, all made by the cold forging process, controlled by the American Screw Co. The advantages are a sharp thread, V shape, thin, rendering the screw easy of insertion; centralized point, tapering shank, wide and ample neck. Drive screw—Made by cold forging process; drives entire distance by the hammer; turns as driven; claims to hold better than a common screw driven (by a hammer) two-thirds; can be removed with common screw-driver. Bolts and

rivets—Cold forging process developed by the American Screw Co. The process also compacts or condenses the material to such a degree that the product is practically unbreakable by any test that can be applied. Plated tire bolts—Made by cold forging process; the fluting enters the wood in the felloe; allows of setting nut without turning the bolt; plain space under the head strengthens and supports same; fluting being straight permits bolt being easily driven out. Rivets—Made by the cold forging process.

To Utilize Convict Labor.

Chattanooga, Tenn., July 2.
Editor Manufacturers' Record:

There is a widespread, increasing interest taken in how to employ convict labor with the least amount of competition with free labor. Some of the States are employing their convicts in the manufacture of clothing, wagons, harness, furniture, boots and shoes, etc., for mercantile purposes. The sale of goods thus manufactured creates great dissatisfaction in every State where sold, besides being a constant irritant to free labor where the goods are produced. So great is this dissatisfaction that a bill has already been introduced in the present Congress, "confining the sale of goods, wares and merchandise manufactured by convict labor to the State or Territory in which they are produced." Some system will probably soon be adopted in every State and Territory to utilize convict labor in such a manner that it will not be brought into competition with free labor.

In suggesting the following plan for so utilizing convict labor, I have chosen the State of Tennessee for an illustration, as this State employs its convicts under its direct supervision in mining coal in mines owned by the State, thus coming in direct competition with free mining labor. The assessed valuation of property in Tennessee by the census of 1890 was \$347,510,463. All of this property, whether real or personal, would be enhanced in value by the building of a system of good public highways. However, not to overstate the value of such a system, we submit the following estimate: Of this assessed valuation, three-fourths, or \$260,000,000, is in real estate. City and village real estate would be enhanced in value as much, if not more, than farming lands by improved highways. Timber lands, at present of small value, owing to the excessive cost in hauling timber and lumber to market, would be enhanced in value to a greater degree than either farming, city or village property. But to under, rather than over estimate, I reckon a low, general enhanced valuation of 15 per cent. on the \$260,000,000. The increased valuation by this small percentage would amount to \$39,000,000. That this matter may be brought home to every citizen for his judgment, let him compare the price of farming lands at present, say \$10 per acre, and judge whether, by the building of a good system of macadamized roads adjacent to such lands, the value would not be enhanced 15 per cent., or to \$11.50 per acre; the timber lands from \$3 to \$3.45 per acre; city and village lots from \$1000 or \$100 per lot to \$1150 and \$115 per lot, respectively.

In order to obtain this low estimate of increased valuation, I select the following method: The State of Mississippi, in 1895, worked its 990 convicts on farm lands, excepting the women and those crippled and aged, who were worked in the penitentiary buildings, making shoes, clothing, repairing wagons, harness, farming utensils, etc., for convict use. The following result is copied from the message of the governor of Mississippi to the legislature, January, 1896: "The crop yield for the past year, from various causes, was seriously affected, and fell far short of what it should have been. It is, however, at a low estimate worth

\$155,000. The expenses during the year, not including mules, horses and farming implements purchased, will not exceed \$95,000, leaving a net profit to the State from this source of not less than \$60,000." This statement makes the earning capacity of the convicts, including the women and aged, \$156 each, and the cost of support \$96 each per annum. This statement is not chimerical; it is a demonstrated fact, vouched for by the governor of Mississippi.

Let these figures be applied to the State of Tennessee, with a convict population of 1650. The cost to support 1650, at the cost to Mississippi of \$96 each, amounts to \$158,400, while the earning capacity of 1616 would be \$158,498, or more than the support of the entire number, 1650; deducting the 1616 from the total of 1650 leaves 34 able-bodied idle men. These can be put at work on public roads without the cost of a nickel to the taxpayer, as there is no earthly reason why the same results cannot be obtained in Tennessee, or any other State, as was done in Mississippi. Vans or large wagons can be built, with frames of round iron, covered, so as to make them comfortable and secure, and they can be moved from place to place, as work on the road progresses, by means of the same teams used in grading, hauling stone and rolling macadam. The drivers or teamsters can act as guards. Supplies necessary for maintenance can be purchased in the immediate vicinity where the convicts are worked, affording to that extent a home market for the farmer and merchant. The surplus product of the State farm can be sold where raised, the proceeds used in payment of supplies for the gangs worked on the roads. By this system of utilizing State convict labor, capital, without solicitation, will seek investment in farming lands, city and village property, the good roads affording an easy haul for farm products and excellent facilities for reaching cities and villages. It will so facilitate the transportation of timber and lumber as to stimulate the building of saw mills on timber lands. When the timber is cut off these timber tracts good farming lands will be left, and in every saw-mill location families will remain for the cultivation of these farming lands. The protection which will thus be guaranteed against convict competition with free labor will cause capital from outside the State to be used in the purchase of mining and manufacturing property, the opening up of new industries, at the same time creating additional employment for the free labor already in the State.

C. E. DANFORTH.

Steam Yachts and Marine Machinery
Built by Marine Iron Works, Clybourn and Southport avenues, Chicago. Free illustrated catalogue. Write them for it. †

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May be avoided by using our City Telephone Exchange System; many in use; also Factory and Short Line Systems complete. Write us, Scott Bros. Electric Co., Detroit, Mich. †

Plan Your Summer Outing Now—Go to Picturesque Mackinac via the Coast Line.

It only costs \$13.50 from Detroit, \$15.50 from Toledo, \$18 from Cleveland, for the round trip, including meals and berths; one thousand miles of lake ride on new, modern steel steamers for the above rates. Send two cents for illustrated pamphlet. Address A. A. Schantz, G. P. A., Detroit, Mich.

If you want to reach the possible land buyers and investors in the North and West who are thinking of locating in the South, advertise in the *Southern States* magazine, published by the Manufacturers' Record Publishing Co., Baltimore, Md.

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

No advertisements but those of a financial character will be accepted for this page.

INTEREST AND DIVIDENDS.

Additional Disbursements of Southern Corporations.

In addition to the list of dividends published by the Manufacturers' Record last week, the following have been declared by Southern corporations:

BALTIMORE.

German Fire Insurance Co., 5 per cent., semi-annual.
People's Bank, 3½ per cent., semi-annual.
National Farmers and Planters' Bank, 5 per cent., semi-annual.
National Fire Insurance Co., 4 per cent., semi-annual.
Farmers and Merchants' National Bank, 3½ per cent., semi-annual.
Associated Firemen's Insurance Co., 4 per cent., semi-annual.
Suffolk & Carolina Railway Co., \$1 per share.
Third National Bank, 3 per cent., semi-annual.
German-American Fire Insurance Co., 3 per cent., semi-annual.
Home Fire Insurance Co., 5 per cent., semi-annual.

NEW ORLEANS, LA.

New Orleans & Carrollton Railroad Co., \$1.50 per share, quarterly.
New Orleans Insurance Association, 3 per cent., semi-annual.
Crescent City Railroad Co., 3 per cent.
New Orleans City & Lake Railroad Co., 4 per cent.
Canal Bank, \$3 per share.
Whitney National Bank, 4 per cent., semi-annual.
People's Bank of New Orleans, 4 per cent., semi-annual.
Southern Insurance Co., 4 per cent., semi-annual.
Union National Bank, \$3 per share, semi-annual.
Louisiana National Bank, \$4 per share, semi-annual.
American National Bank, \$3 per share.
Bank of Commerce, 3 per cent., semi-annual.
Germania National Bank, \$4 per share, semi-annual.
Jefferson City Gas Light Co., \$2 per share, semi-annual.

RICHMOND, VA.

Merchants and Mechanics' Building Fund Co., 3½ per cent., semi-annual.
Union Bank of Richmond, \$3 per share, semi-annual.
Savings Bank of Richmond, 3 per cent., semi-annual.
National Bank of Virginia, 3 per cent.
Planters' National Bank, 5 per cent.
Virginia Trust Co., 3 per cent., semi-annual.
State Bank of Virginia, 3½ per cent.
Merchants' National Bank, 3½ per cent., semi-annual.
Granite Building Co., 4 per cent., semi-annual.

SAVANNAH, GA.

National Bank of Savannah, 3½ per cent., semi-annual.
Augusta & Savannah Railroad Co., \$2.50 per share.
Southern Bank of the State of Georgia, 5 per cent., semi-annual.
Germania Bank, \$3 per share.
Oglethorpe Savings & Trust Co., \$3 per share, semi-annual.
Brush Electric Light Co., \$4 per share, semi-annual.
Savannah Brewing Co., \$3 per share.
Georgia Investment Co., 12 per cent., annual.

LOUISVILLE, KY.

United States Building and Loan Association, 5 per cent., semi-annual.
National Building and Loan Association, 4 per cent., semi-annual.
German Security Bank, 4 per cent., semi-annual.
Western Bank, 3 per cent., semi-annual.
Western Insurance Co., 4 per cent., semi-annual.
German Bank, 6 per cent., semi-annual.

Louisville Warehouse Co., 4 per cent., semi-annual.

Union National Bank, 3 per cent., semi-annual.

Farmers and Drivers' Bank, 1½ per cent., quarterly.

German Insurance Bank, 5 per cent., semi-annual.

Bank of Commerce, 5 per cent., semi-annual.

Louisville Trust Co., 2 per cent., quarterly.

Columbia Finance & Trust Co., 2 per cent., quarterly.

German Insurance Co., 3 per cent., semi-annual.

Third National Bank, 3 per cent., semi-annual.

Kentucky Heating Co., 3 per cent., semi-annual.

Kentucky Title Co., 3 per cent., semi-annual.

Louisville Banking Co., 3 per cent., semi-annual.

Kentucky Trust Co., 3 per cent., semi-annual.

Louisville Insurance Co., 5 per cent., semi-annual.

Bank of Kentucky, 4 per cent., semi-annual.

AUGUSTA, GA.

National Bank of Augusta, \$3.50 a share.
Planters' Loan and Savings Bank, 2 per cent., semi-annual.

CHARLESTON, S. C.

Cold Storage & Manufacturing Co., 8 per cent., annual.
Dime Savings Bank, \$5 per share, semi-annual.
Bank of Charleston, \$4 per share, semi-annual.
Enterprise Bank, 3 per cent., semi-annual.

CHARLOTTE, N. C.

Commercial National Bank, 5 per cent., semi-annual.
Merchants and Farmers' National Bank, 3 per cent., semi-annual.
Loan and Savings Bank, 3 per cent., semi-annual.

LYNCHBURG, VA.

First National Bank, 3 per cent.
People's National Bank, 5 per cent., semi-annual.
National Exchange Bank, 3 per cent., semi-annual.
Lynchburg National Bank, 5 per cent., semi-annual.

PORTSMOUTH, VA.

Portsmouth Insurance Co., 5 per cent., semi-annual.
People's Bank, 3 per cent., semi-annual.
Bank of Portsmouth, 4 per cent., semi-annual.
Merchants and Farmers' Bank, 4 per cent., semi-annual.

MONTGOMERY, ALA.

First National Bank, 3 per cent., semi-annual.
Merchants and Planters' National Bank, 4 per cent., semi-annual.

MOBILE, ALA.

People's Bank, 6 per cent., semi-annual.
First National Bank, 6 per cent., semi-annual.

GALVESTON, TEXAS.

Texas Guarantee & Trust Co., 4 per cent., semi-annual.
Citizens' Loan Co., 3½ per cent.
Savings & Loan Co., 4 per cent., semi-annual.
First National Bank, 4 per cent., semi-annual.

FREDERICK, MD.

Franklin Savings Bank, 2½ per cent., semi-annual.
Fredericktown Savings Institution, 4 per cent., semi-annual.

MISCELLANEOUS.

State Savings Bank, Memphis, Tenn., 5 per cent., semi-annual.
Farmers' National Bank, Salem, Va., 3½ per cent., semi-annual.
Comas Machine Co., Salem, Va., 5 per cent., quarterly.
Exchange Bank, Macon, Ga., 3½ per cent., semi-annual.
Atlanta Loan & Investment Co., Atlanta, Ga., 8 per cent., semi-annual.
Fourth National Bank, Columbus, Ga., 3 per cent., semi-annual.
First National Bank, Cumberland, Md., 5 per cent., semi-annual.
Chesapeake & Potomac Telephone Co., Washington, D. C., \$1 per share.
Southern Stock Insurance Co., Greensboro, N. C., 10 per cent., semi-annual.
Bank of Way Cross, Ga., 4 per cent., semi-annual.
Citizens' National Bank of Pensacola, Fla., 4 per cent., semi-annual.
The National Bank of Greensboro, N. C., dividend 10 per cent.

INTEREST PAYMENTS.

Mobile, Ala., city bonds, through Mercantile National Bank, New York, and First National Bank, Mobile.

Southern Railway Co. bonds, through J. P. Morgan & Co., New York: First consol 5 per cents., Richmond & Danville consol 6s, Richmond, York River & Chesapeake 5s, Western North Carolina 6s, Charlotte, Columbia & Augusta 5s, Columbia & Greenville 5s, East Tennessee, Virginia & Georgia 7s, East Tennessee, Virginia & Georgia 5s, Alabama Central 6s, Georgia Pacific 5s, Knoxville & Ohio 6s, Spartanburg & Columbia 4s.

Through Winslow, Lanier & Co., New York: State of Louisiana consol 4s, city of New Orleans 4s, city of Wheeling 6s.

Through Farmers' Loan & Trust Co., New York: Alabama Great Southern Railroad 6s, Baltimore & Southwestern bonds, Carolina Central bonds, Charleston, W. Va., water-works bonds, Chattanooga Water Works Co. consols, Mobile & Ohio Railroad first mortgage extension, Mobile & Ohio car trust, Ohio & Mississippi first consols, Pensacola Water Works Co., Pensacola & Perdido Railroad Co., Portsmouth & Suffolk Water Works Co., Texarkana Water Co., Vicksburg, Shreveport & Pacific Railroad.

Through N. W. Harris & Co.: Galveston, Texas, improved bonds, Hill county, Alabama, refunding, Richmond, Ky., school.

New Corporations.

Guarantee Loan & Trust Co. has been incorporated at Wheeling, W. Va., by J. F. McCarter, N. C. Hamilton, E. M. Pierce and others.

The new national bank at Goldsboro, N. C., has been authorized to begin business, with \$50,000 capital, by the government. Wilmington parties are interested in the institution.

The secretary of state has granted a charter to the Citizens' Insurance Co., of Columbia, S. C., which will begin business with \$200,000 capital. E. L. Wiant, of Brooklyn, N. Y., and N. N. Johnson, of Marion, S. C., are among the directors.

The comptroller of the currency has authorized the Riggs National Bank, of Washington, D. C., to begin business in that city. This is to be a successor to the old Riggs banking-house, for many years one of the noted financial institutions of Washington.

New Securities.

John L. Yates, of Lunenburg, Va., will receive bids for \$60,000 in bonds for refunding purposes. Bids will be received until July 25.

The city of Dalton, Ga., will vote on July 22 on the question of issuing \$30,000 in sewer bonds. J. C. McAfee, mayor, may be addressed.

Joseph M. Brown, of Anderson, S. C., is negotiating the sale of \$125,000 in 6 per cent. gold bonds to develop water-power near that place. It is stated that he has already placed \$50,000 of the issue. Parties interested may address him.

Financial Notes.

It is unfortunate that Roanoke, Va., will default on the interest on its bonds. That town has stood out so conspicuously in Virginia, as Birmingham has in Alabama, in the way of industrial advancement that its failure to meet its interest promptly injures the whole South to some extent. The Manufacturers' Record fully recognizes the disadvantages under which Roanoke and some other Southern places have labored, but it would urge that any sacrifice be made to maintain financial integrity. Upon that depends very largely the investment of money in Southern securities. The South must prove to the world that there is no just ground for the complaints made against it because of such defaults as these, and this cannot be done except by the most scrupulous fulfillment of every financial obligation by all municipalities.

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Exporting Iron Pipe.

A dispatch from South Pittsburg, Tenn., says:

"The South Pittsburg Pipe Works has just received an order for 1600 tons of cast-iron water pipe for shipment to Costa Rica, Central America. This order was taken in competition not only with American foundries, but also Belgium and English foundries, and the result is certainly a great credit to Tennessee. The plant has a most marked advantage over all Eastern competitors, being located in the heart of the Southern iron district, and having iron ore, coal, furnaces, coke ovens, lime, clay and cheap labor at its very doors. Such an order, under such circumstances, shows what may be done. The South Pittsburg Pipe Works is today ahead of all similar industries in the South."

J. WM. MIDDENDORF.

Members Baltimore Stock Exchange.

WM. B. OLIVER.

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